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CANCER OF THE RECTUM AND SACRAL RESECTION—OVARIAN TUMOR AND OVARIOTOMY.

CLINICAL LECTURE DELIVERED AT THE JEFFERSON HOSPITAL, JANUARY 3, 1893.

BY E. E. MONTGOMERY, M.D.,

Professor of Clinical Gynæcology, Jefferson Medical College; Obstetrician to the Philadelphia Hospital; Gynæcologist to St. Joseph's Hospital.

GENTLEMEN:—This patient, fifty years of age, brought before you through the courtesy of Dr. Casselberry, of Hazleton, has been suffering, more or less, for the last year from distress during evacuation of the bowels. This, of late, has been very greatly aggravated, attended with constant tenesmus, straining, continual desire to have the bowels evacuated, and a discharge of blood and pus. Upon examination, it was found that a stricture of the bowel occurred about half an inch from the anal orifice, extending about two inches up. This stricture was produced by an infiltration of the rectal wall from malignant disease. It is not a tight stricture, as the finger can be passed through it; but the absence of peristaltic action and the contraction together have given rise to inability to complete the evacuation of the bowels and to the tenesmus of which we have already spoken. If this condition were permitted to

continue undisturbed, it would result in complete obstruction of the bowel. As the finger is passed into the vagina, it is found that its posterior wall is infiltrated to a certain degree, and its mucous membrane cannot be pushed over or moved upon the infiltration. This, as I have already informed you, is an almost certain indication of malignant disease. In a patient suffering from such a state, we are confronted with the question as to what is best to do. How can we make her more comfortable, and can we give her hope of a radical cure of the disease which is beginning so insidiously, and which will, if uninterrupted, terminate her life? With a view to making the patient more comfortable and prolonging her life, the stricture could be dilated by the frequent introduction of bougies, or a knife could be introduced through the stricture and an incision made posteriorly through the entire thickness of the rectal wall, and the stricture subsequently dilated. The latter operation would be attended, of course, with some danger of fæcal infiltration and the formation of a post-rectal abscess. This danger avoided, the injury would heal up by cicatricial tissue or become infiltrated by the disease, rendering the subsequent condition of the patient as bad as at present. Neither operation relieves the patient of the great discomfort from contact of fæcal matter with the ulcerated and abraded surfaces, a condition which keeps up the distressing tenesmus from which she has been suffering. A palliative operation could be done by making an opening into the descending colon higher up, to establish an artificial anus, and secure subsequent evacuations of the bowel through it. This opening might be made either in the lumbar region, as advocated by Amussat, or in the inguinal region. The operation is known as colotomy, although the term colostomy would be the preferable one. The only reason for advocating the lumbar incision is that by making an opening in this region we are enabled to reach the colon behind the peritoneum, and thus open the gut without injury of that member. With the later methods of operative procedure, however, the opening of the peritoneum is no longer considered particularly perilous, and as the lumbar incision places the outlet of the bowel in an almost inaccessible position, making it difficult for the patient to care for it, the inguinal incision is preferred.

The manner of performing the operation in the latter region will depend somewhat upon whether it is intended to be a temporary or permanent procedure. Where temporary, the bowel will be opened upon one side, its edges brought out and stitched to the skin. Where permanent, the preferable plan of procedure is to cut the intestine in two, inverting the edges of the peripheral end and sewing it up. The central end is brought out at the opening, and its edges stitched fast to the skin, thus making this the terminus of the bowel. The advantage of this procedure is that there is no opportunity for fæces to pass into the lower portion of the gut, making it a reservoir in which the material becomes inspissated, to subsequently greatly annoy the patient. These operations, however, are merely palliative. They render the patient more comfortable for the time being, but afford her no hope of cure. With a view of relieving pain and distress they are eminently justifiable. They leave her, however, in a condition which is an exceedingly dangerous one, in which it is necessary for her to assume an unnatural attitude whenever the bowels are moved. For these reasons we prefer, wherever possible, to establish the artificial anus posteriorly, removing, if necessary, a portion of the sacrum to do it. This I propose to do in this patient to-day, and take out the one side of the fourth and fifth sacral vertebræ. We will dissect out the rectum and anus, and in this patient part of the posterior wall of the vagina. The healthy end of the bowel will be brought out at the lower end of the resected sacrum and stitched fast to the skin. Such an operation is, of course, not applicable in every case. Where it is, in those cases in which the disease is limited to the rectum, it should be chosen for the following reasons: 1, it affords the patient hope of a radical cure; 2, it gives her an artificial anus in a position in which she is not obliged to assume an unnatural attitude to have the bowel evacuated; 3, she can more readily wear a pad or compress by which the outlet can be controlled; 4, establishing an artificial anus in this region is an advantage, in the fact that the opening is situated close to bone, and consequently there is less likelihood of cicatricial contraction of its outlet.

Preparatory to the performance of the operation we have had the patient thoroughly shaven, the vagina cleansed, and the rectum washed out. We have cleansed the vagina for the reason that we expect to open into the canal. In performing the operation, we place the patient on her left side, the limbs drawn up, lying slightly prone. A bow-shaped incision is made from the right sacro-iliac synchondrosis across the median line to the left and beyond the apex of the coccyx. The tissues are dissected off the sacrum and coccyx,

the latter bone seized, disarticulated, and enucleated. The left side of the fourth and fifth sacral vertebræ are cut through with bone-pliers. Incision is made below the third sacral foramen for the reason that, if it were carried above this, there would be danger of injury to the sacral plexus of nerves. The fourth and fifth foramina of the sacrum in front give vent to branches distributed to the bladder and rectum. If these were cut on both sides, we would have paralysis of these organs with disturbance of their function. Cutting but one side, the remaining nerves compensate for the loss. Incision is made upon the left side for the reason that, as you remember, the rectum is situated more to the left side of the pelvis, and consequently incision here comes directly upon its posterior surface. With this incision you see there is quite considerable bleeding, particularly from the median sacral artery. This is controlled by packing with sponges and making pressure over these bleeding vessels. The rectum is now pushed off from the sacrum, and we complete our dissection around it below, cutting out the rectum and anus completely, and carrying our incision into the posterior surface of the vagina, removing at least an inch and a half of its posterior wall. The rectum is dissected up, and we cut above the disease. In doing so, on its anterior surface I open, as you see here, into the peritoneal cavity. The bowel is now drawn down until we have a sufficient amount of healthy tissue below to attach it readily to the skin. Before opening the bowel we will sew up the peritoneal cavity in order to prevent its being soiled with fæcal matter. The bowel is then cut off, and I pack some gauze into its orifice to prevent the extrusion of fæcal matter. Its edges are now sewed fast to the skin on either side, particular care having been taken first to smooth off the end of the sacral vertebræ, so that undue pressure will not be made upon the gut. Having done this, the wound is sutured above and below, first, however, introducing sutures through the posterior wall of the vagina to close up the wound cavity. In bringing out the bowel and stitching it fast, it is very important to make sure that it is not drawn taut, for, if so, it is likely to slough off, rendering the operation to that degree ineffectual. The wound is closed above and below, excepting at the inferior part, where the end of the gauze drain makes its exit. The cavity above, from which the rectum has been taken, has been filled with an iodoform-gauze packing. The wound is closed by catgut sutures. In order to make sure that there is no traction upon the skin edges, where attached to the gut, we will introduce a deep suture, fastening either end with perforated shot, and draw it out in such a way that the skin edges will be inverted. The bowel is found to be filled with a considerable amount of hard fæcal matter. The wound will be dressed as in ordinary procedures, changed frequently, or whenever it is apparently soiled by fæcal discharge or secretion from the wound. The patient is considerably shocked, and will be given at once hypodermic injections of strychnine; these will be kept up as they seem to be required.

NOTE.—This patient died at the end of forty-eight hours from suppression of urine; but an ounce was passed subsequent to the operation. It is a question in this case whether we did wisely in having resorted at once to so radical an operation; whether the preferable plan of procedure would not have been to have done colostomy, and thus afforded her relief by a much more simple operation, one which would not produce so much shock and would permit her to improve before it was necessary to resort to so serious an operation.

The next patient Dr. Reynolds, of Reynoldsville, Pa., kindly brings to us with the following history: She is forty-three years of age; has been suffering for quite a length of time from sensation of weight and pressure in the pelvis. During the last two months there has been a remarkably rapid distention of the abdomen, and, as she lies before us, you will notice that this distention extends above the umbilicus, and it is situated higher upon the right side. There is a distinct crease or depression running between the mass on the right side and the one which is situated lower down on the left. The patient during its growth has become very greatly emaciated. From her appearance, the size of the growth, its sensation of elasticity or fluctuation, I am inclined to fear we have here to deal with an ovarian tumor or double ovarian cyst. The rapid growth, the marked emaciation, and the more or less fixation of the mass leads me to fear that it may be malignant. The abdominal walls are very thin. We make an incision in the median line an inch above the symphysis, carrying it towards the umbilicus. If we cut through the skin, superficial fascia, and aponeurosis of the muscle, we now pick up the tissue with forceps, and before cutting through it, examine it carefully to see that we have not the bladder. In doing so, you will notice that the bladder is found higher up than ordinarily, and if we were careless in our manipulation we might very readily have opened it, and thus had an

additional complication. This accident has occurred quite frequently in the experience of some of the most skilful and careful abdominal surgeons. I happened to have this experience a few years ago, opening into the bladder before I realized what it was. It was immediately sutured with catgut, and the patient experienced no inconvenience during the convalescence. Opening the peritoneum, we are able to see this growth, and as I pass in my hand I find there are extensive adhesions. The growth itself is situated beneath the broad ligament, which it has pushed up over it. I am very careful, in enucleating this mass, to avoid its rupture. Having removed the mass upon the right, which is the larger, I now proceed to examine from the left, and find a mass lower down, which we peel out. Having raised up this sac, we will proceed now to the ligation of the vessels upon either side. This is done with chromatized catgut. Examining the pelvis still further, we find evidence of other cysts situated low down, one just over the rectum in Douglas's pouch. Breaking into this, we find it filled with clear fluid. These cysts are deeply and closely attached, and their removal would be attended with considerable danger, so we propose not to attempt it, but will open and pack their cavities with iodoform gauze, thus setting up an inflammation which will obliterate the sacs. As I look into the abdominal cavity, I see two or three small cystic masses, which are evidently degenerated mesentery glands. These we peel out. The drainage is accomplished by iodoform gauze, through its capillary action. We first take a piece of this gauze about a foot and a half long, tie a ligature to its central part and invert, and pack it into the abdominal cavity, spreading it out, and then packing inside this sheath or cover a sufficient amount of gauze to make pressure in the pelvis and prevent subsequent hemorrhage. The wound is closed above with catgut sutures. We prefer the gauze tent for this purpose for the reason that it is, through its capillary action, a very effective drain, and, as introduced into the cavity, it does not give rise to the infection of the cavity as easily as might take place with an ordinary glass drainage-tube. With the latter it is necessary that the cavity should be emptied every fifteen minutes to an hour. The introduction of the syringe for this purpose necessarily leads to drawing in of pathological germs and material, thus rendering liable the infection of the cavity and its subsequent suppuration. This patient will be kept quiet in bed; shock overcome by the use of artificial heat and by hypodermic injections of strychnine. As soon as her stomach will bear it, she will be given nutritious food in small quantities, and at any indication of elevation of temperature salines will be administered.

SYMPATHETIC IRRITATION AND SYMPATHETIC SEROUS IRITIS, WITH CASES.

A Clinical Lecture in the Jefferson College Hospital.

By G. E. de Schweinitz, M.D.,
Clinical Professor of Ophthalmology in the Jefferson Medical College; Ophthalmic Surgeon to the Philadelphia Hospital.

GENTLEMEN:—We are concerned this morning with the affections in which one eye is implicated as the result of disease or injury to the other; in other words, with sympathetic irritation and sympathetic ophthalmitis.

You are probably aware that it is customary—indeed, it is important and scientifically accurate—to apply these terms to two essentially different conditions; but whether we deal with sympathetic irritation or with the more serious condition of inflammation, the eye which is implicated as the result of disease or injury of its fellow is described as the "sympathizing eye," and the one which is affected by the disease or injury which causes the implication as the "exciting eye." Bear these two terms in mind, as I shall have occasion to use them again in the descriptions which follow.

The first patient, a man, aged thirty, was injured by the premature explosion of a dynamite cartridge, causing such extensive laceration of his right foot that amputation was necessary. At the same time his left eye sustained injuries resulting in the lesions which I shall presently demonstrate to you. He has been under the care of Dr. William Forbes, and as the leg has entirely healed, Dr. Forbes has very kindly transferred him to the Eye Department for further treatment. You observe that there is a large scar in the lower and outer portion of the cornea of the left eye, passing through the ciliary region, to the margins of which the iris is attached, while the lens is cataractous, the aqueous humor turbid, the general eyeball coarsely injected, the tension slightly below normal, and there is marked tenderness in the upper portion of the ciliary zone. In other words, we have the lesions of traumatic irido-cyclitis and cataract. Vision is entirely obliterated, and there is not the faintest trace of light perception in any portion of the field.

Ever since the injury the eye has been painful, but in the last few weeks this pain has

markedly increased, being present not only on pressure, but constantly. More than this, the other eye, while not tender to the touch, is sensitive to the light; there is increased lachrymation, impaired amplitude of accommodation, occasional shoots of pain through the brow and temporal region, and slight veiling of the margins of the optic nerve. The pupil is larger than one would expect in a patient at this age of life and with this exposure to light, although I have not been able to observe oscillation of the iris, a symptom which Mr. Gunn has stated to be present when a sympathetic irritation, which is the condition now presented to us, is about to give place to an actual inflammation.

The symptoms are sufficiently pronounced, and have been sufficiently persistent, to make enucleation of the excitor a proper surgical procedure. While it is true that a sympathetic disease of this character is a functional disturbance, and is by no means the necessary precursor of a sympathetic ophthalmitis, such an outcome is occasionally the case, and, even if it were not, the evident indication is to remove the cause which is exciting the functional disturbance which you here witness, and to relieve the pain which is occasioned by the traumatic iridocyclitis of the left eye.

As the eyeball is somewhat soft, and the conjunctiva closely adherent to it on account of the previous inflammation, I will enucleate the eye by Bonnet's method, although, as you know, by the Vienna plan the operation can be more rapidly accomplished. A stop speculum being inserted, I divide the conjunctiva with scissors in a circle close to the margin of the cornea. The tendons of the ocular muscles are now successively raised upon a strabismus-hook and severed. When the tendon of the external rectus is reached, I allow a small stump to remain, which may be utilized afterwards as a point of application for the forceps. By inserting the stop speculum somewhat more deeply, the eye, as you see, is made to start forward, the stump of the external rectus is seized with forceps, the eye drawn forward, the curved scissors introduced between it and the severed conjunctiva until the optic nerve is reached, which is cut squarely off. The attachments remaining are the oblique muscles, and these are now readily divided. Hemorrhage, you observe, is only moderate in quantity, and has practically ceased after the irrigation of the socket with a bichloride solution (1 to 8000). Iodoform is dusted over the surface of the wound and an ordinary antiseptic dressing applied. For a few days I shall exclude the light from the right eye in order that the symptoms of irritation may more readily subside.

On opening the eyeball, you notice the following interesting lesions: The cataractous lens and iris are firmly bound together, the ciliary body is thickened, the retina detached, and the centre of the vitreous occupied with this firmly-encysted abscess. I cannot find a foreign body, although we might reasonably expect a small portion of the cap. It is possible that it has not only penetrated, but passed entirely through the coats of the eyeball; in its course, however, lodging some infecting material, which has resulted in the suppuration which is so beautifully shown here.

This is a fair example of a very constant result of injury to the ciliary region, the wound being generally found in a zone about a quarter of an inch in width, surrounding the cornea, which Mr. Nettleship has aptly called the "dangerous region." Plastic or purulent cyclitis results, in our case followed by a purulent hyalitis. The sympathizing eye presents a series of phenomena which are of the nature of a neurosis, and to which the term sympathetic irritation is applied. Under circumstances such as I have shown you to-day, the proper treatment is enucleation of the exciting eye, or, if not enucleation, one of the substitutes for this operation, particularly that one which is called evisceration. The result is almost uniformly a cure, and I doubt not that at a subsequent lecture I will be able to show you this patient, not only well in so far as the operation is concerned, but relieved of the symptoms in the sympathizing eye.*

The next case is of a much graver nature, not only on account of the lesions which have taken place, but in relation to the preservation of vision. The patient, a young man, aged twenty-nine years, eleven weeks ago was injured by a piece of steel striking the left eye. The sight was lost at the time, and, as you see, there is a large cut through the upper ciliary region, which has healed with a puckered cicatrix; the iris is inflamed and bound down to the capsule of the lens, the anterior chamber shallow, the eye slightly shrunken, soft to the touch, and very tender on pressure; in other words, a traumatic irido-cyclitis with beginning shrinking.

No symptoms of trouble in the right eye appeared until a few days ago, when he presented himself at the clinic. Then, unfortunately, not an irritation, but a true inflammation had already begun. The entire eyeball was slightly

* The symptoms of irritation rapidly subsided, and the patient is now entirely well.

injected, while around the margin of the cornea there was a zone of fine, pinkish injection. The iris was mobile, but at the lower margin of the cornea there was a faint haze, and one spot on the iris was a little thickened. The vision was normal, the optic nerve hyperæmic, the field of vision uncontracted, but there was slight tenderness in the ciliary region. The patient was at once put upon small and frequently-repeated doses of calomel, atropine was instilled into the right eye, and the light excluded. For twenty-four hours he appeared better. At the end of that time, in spite of treatment, the spot of infiltration in the cornea deepened, and a characteristic triangular deposit of opaque dots appeared in Descemet's membrane, and a soft synechia formed in the lower margin of the iris. He was now freely leeched from the temple, atropine was more vigorously applied, and protiodide of mercury was given in place of the calomel, together with tonic doses of quinine. These measures fortunately resulted in the tearing loose of the synechia which had formed, so that the pupil is round and widely dilated and the ciliary injection has somewhat subsided, although, as you see, the eye is red, inflamed, tender to the touch, and there is a patch of keratitis punctata.

In short, gentlemen, we have here the very serious condition of traumatic irido-cyclitis of the left eye, which, in all probability, contains a foreign body, and sympathetic serous iritis of the right eye, and we stand in the presence of a grave question for solution,—namely, whether or not to excise the excitor in the hopes that this, by relieving a source of irritation, may modify the dangerous organic disease which has already seized hold of the sympathizer.

In order to understand why there should be any hesitancy, we must revert for a moment to the probable explanation of sympathetic ophthalmitis. No doubt you will remember that formerly it was almost universally taught that this disease was due to a reflex action through the ciliary nerves, and therefore the name "sympathetic" was applied. Now, while we are not sure of the exact nature of this malady, nor thoroughly acquainted with the path of the morbid changes, the old hypothesis of transmission by the ciliary nerves has been largely abandoned and the theory of infection has been revived and, perhaps I may say, proved. The micro-organisms from the seat of original injury find their way, probably by the sheaths of both optic nerves, to the sympathetic eye, and there set up an ophthalmitis, which may present itself in the form of an irido-cyclitis, a serous iritis, such as I show you to-day, or, more rarely, as a choroido-retinitis, while in many, if not in all, of the varieties of sympathetic inflammation the primary symptom is a low-grade neuritis or neuro-retinitis, although this symptom is not the one which first attracts the attention of the surgeon.

With these facts in mind you can readily understand that when the tissues of the sympathizer are infected, though excision of the excitor removes the original focus of infection, it does not destroy the morbid changes which have already seized upon the sheath of the optic nerve and the coats of the eye upon the opposite side. The question to be decided, therefore, is, Will the ultimate result be better if the medicinal treatment of sympathetic ophthalmitis is employed to the exclusion of operative interference upon the blind but exciting eye, or will the chances of recovery be improved by removal of the excitor? At the first blush it would seem that there is only one answer to this question,—namely, to remove the original cause,—but in certain instances the sympathetic disease has apparently been aggravated by this procedure, and a serous iritis has changed into a plastic type; at least this is the assertion of one or two very high authorities.

We must hence base our line of conduct to-day upon the teaching and experience of the best-known ophthalmic surgeons and upon the statistical information which has been gathered to elucidate this very point. We find that Noyes, Berry, Schweigger, Swanzy, Schmidt-Rimpler, De Wecker, and many others that I might mention were I so inclined, are in practical accord that efficient help is gained in the treatment of sympathetic ophthalmitis by the removal of an exciting blind eye, provided the enucleation is performed when not more than two, or at most three, weeks have elapsed since the appearance of the sympathetic disease. Moreover, we are in possession of a great deal of statistical information. In 1886 a committee was formed in England to gather information on the subject of sympathetic ophthalmitis, and for this purpose the literature of the subject was examined and a circular containing a number of questions was sent to many prominent ophthalmologists. The very first question upon this circular is, When sympathetic inflammation has begun, does excision of the exciting eye influence its progress? And the following piece of evidence was presented in reply: Among two hundred cases, there were sixty-four in which the excitor was removed within a short time (that is, within three weeks) of the onset of the sympathetic inflammation, and of these the sympathizing eye was known to be lost in

only eight. In an almost identical number (sixty-five) the excitor was either not removed at all, or not until long after the sympathetic disease had set in, and in no less than twenty-six of these the sympathizer was lost. From these data the committee concluded that whether early removal of the exciting eye be positively useful in staying the disease or no, it certainly is not injurious, although no less an authority than Mauthner has asserted that it is when the sympathetic disease is of the serous form.

By way of recapitulation, a quotation from Noyes is *apropos:* "The removal of the cause is the only effective treatment, and that means enucleation of the exciting eye. The operation is by far more satisfactory in the irritative forms, and there rarely does it fail. When the inflammatory condition is once begun, an early operation may check its progress, but this is not to be absolutely counted on, even if done on the very first day (Hirschberg). Enucleation, when the inflammatory process has gained decided headway, has little control over it; yet it does not aggravate it, as claimed by Mauthner. Sometimes it mitigates a patient's sufferings, and cases of effective relief are recorded." The weight of opinion, therefore, being in favor of operative interference, if for no other purpose than to check what De Wecker would call the transmission of impulses, I will excise this exciting eye.

This I do in precisely the same manner as in the previous case, and need not repeat the details of the operation. While Dr. Phillips is applying the dressings, I will open the eye and demonstrate the lesions. You observe that the ball is slightly shrunken and beginning to assume a quadrate shape, the retina is detached in folds, the ciliary body thickened, the vitreous slightly purulent, and lying in the long axis of the eyeball, stretching between the posterior surface of the lens and the optic nerve entrance, and entangled in the meshes of the detached retina, is a piece of steel twelve millimetres in length and three millimetres in width. In short, we have here conditions potent above all others to produce sympathetic ophthalmitis,—namely, traumatic irido-cyclitis and retained foreign body. The subsequent treatment of this case will consist of rest in bed, exclusion of light from the right eye, the frequent use of an atropine solution, and the internal administration of the protiodide of mercury to the point of tolerance, together with tonic doses of quinine.*

* The iritis steadily improved, and one month after operation there has been no relapse, the eye being white and quiet.

Now, gentlemen, I beg you to understand that I have been describing to you the proper course of treatment in a case of sympathetic ophthalmitis, under the circumstances which this patient presents, provided the exciting eye is blind. A very different line of procedure is necessary if the excitor retains sight, even in very moderate degree. Then it is not justifiable to operate for its removal, because in the end it may be the eye which will retain the more useful vision, or, in other words, the treatment of the original injury may result in the preservation of vision, perhaps even useful vision, while the sympathetic disease may terminate in blindness.

Let me repeat some rules to you which cover the ground as well as it is possible to do so, with reference to the various problems that may be presented in the treatment of sympathetic ophthalmitis and your relations as surgeons to the case. Bear in mind that I speak of ophthalmitis now, not of the disease which I described in connection with the first case. These rules are quoted from those which are given by Mr. Swanzy, because I think they are clear, to the point, and represent the published experiences of the best authorities.

You should perform enucleation, or one of its substitutes, on,—

(1) An eye with a wound which involves the ciliary region to such an extent that sight is immediately destroyed, or that its ultimate destruction by the process of inflammation is practically certain.

(2) An eye which has been wounded in the dangerous region, and in which severe inflammation of the iris or ciliary body has already begun, even if sight is not destroyed.

(3) An eye which contains a foreign body which judicious efforts have failed to extract, and when much iritis is present, even if sight is not destroyed.

These three rules, you will observe, apply to preventive enucleation,—that is to say, the operation is performed in order to check sympathetic disease.

Now let me quote you two which should be your guide, provided the sympathetic disease has already begun, as in the case which we have been considering.

1. You should perform enucleation, or one of its substitutes, on an eye whose sight has been destroyed, even though sympathetic inflammation has begun in the sympathizing eye, because by this means you remove a source of irritation and hope to render the treatment of the sound eye more effectual.

2. You should *not* perform enucleation, or one

of its substitutes, on an eye which has been injured, but which retains some vision, when sympathetic inflammation has begun in the sympathizing eye, because in the end it may prove to be the more useful organ.

Under the last-named circumstances you must employ the medicinal treatment suited to the excitor, as well as that needed by the sympathizer. Generally this treatment consists in the frequent instillation of atropine, local bloodletting, and, if the patient is sufficiently robust, the use of mercury in some form, preferably, I think, protiodide by the mouth, or inunctions, to the point of tolerance, but not to that of salivation, tonic doses of quinine, and concentrated, nourishing food. The light should be excluded, if necessary with a bandage, but there is no objection to the patient having proper exercise, which usually may be given in the room to which he is almost of necessity confined. Should this not be practicable, he may be taken out with eyes properly protected with bandages.

Of course you understand it is possible to give only a general outline of the treatment; in the details you must be guided by circumstances surrounding each case. At some future lecture I will point out to you the treatment of scleral wounds and the great advances which have been made in the management of badly-injured eyes, even with penetrating wounds of a serious nature and trenching upon the ciliary region, or actually passing through it. Time does not permit me to do so to-day. I must, however, refer to one treatment of sympathetic ophthalmitis, which has, perhaps, not had sufficient trial to take its station among the best-recognized surgical procedures, and yet which has much to commend it and has been advocated by surgeons of great experience and sound judgment. I refer to injections of antiseptic solutions into the sympathizing eye. Abadie and several other French and also Italian surgeons have published cases where marked improvement occurred by injecting two to five drops of a strong solution of the bichloride of mercury into the vitreous chamber; for example, in one recently reported case of stubborn sympathetic irido-cyclitis the strength of the solution was 1 to 500. The injection was twice repeated, and good results are recorded. Recently, in England, Mr. Berry and one of his assistants have undertaken a series of experiments to prove the tolerance of the vitreous humor to various types of injection, and their results seem to show that aqua chlorinata was the most acceptable. At present, Dr. Hare and myself are engaged in a similar series of experiments in the Laboratory of Experimental Therapeutics, because the exact therapeutic relation of these fluids, when introduced into the eye, to a microbic disease, and especially the relation of the chemical composition of the vitreous to that of the fluid injected, are points that require considerable elaboration.

Finally, gentlemen, I do not wish to close this talk without in my last sentences emphasizing one point,—namely, that while sympathetic inflammation may be preceded by symptoms more or less analogous to those which I described as a neurosis, this is by no means always, nor, indeed, is it commonly the case, and therefore a sympathetic irido-cyclitis, serous iritis, or choroido-retinitis may arise insidiously, practically without warning, and the lesions become pronounced before the gravity of the situation is appreciated. Nowhere more than in this disease does the law of preventive surgery apply. An incubation period, varying from three to six weeks, is common, but recollect that the disease may develop sooner or may be delayed for a long time. From the day on which the conditions arise that are liable to cause sympathetic ophthalmitis until they are removed the patient is not safe from this grave malady.

TIN-POISONING.

Read before the El Paso County Medical Society, January 10, 1893.

By W. A. Campbell, M.D., Colorado Springs, Col.

THE cases that form the basis of this paper occurred in my practice some time ago. Their rarity justifies me in presenting them to you to-night. I will first outline the cases to you, and comment on them farther on.

Case I.—I was called at 3 A.M. October 19 to go several miles into the country to see a little girl two years of age. She was said to be in a critical condition. When I arrived at the house I found that my little patient was dead. The doctor in attendance (an eclectic) said she had cholera infantum. Her parents stated that she had suffered intense pains in the abdomen, accompanied by vomiting of the contents of the stomach and biliary matter. She also had a profuse diarrhœa. The alvine evacuations were quite offensive in odor and streaked with blood. The evacuations were attended with tormina and tenesmus. The stools contained round worms (*Ascaris lumbricoides*) in great numbers. The child very rapidly lost strength, and died in a state of collapse. Previous to this attack she was quite healthy.

Case II.—While at the house on October 19, I was asked to examine and take charge of

George ——, aged five years, brother of the little girl. He had been sick for about one week; had had vomiting and diarrhœa. The diarrhœa had now assumed a dysenteric type. He had as many as thirty stools during the twenty-four hours. Stools contained many *Ascaris lumbricoides*. His condition at this time was as follows: Pulse, 125; temperature, 103° F.; respiration, 25; tongue pointed and red; pain in bowels; very tender on palpation; tympanitic; wants to eat, but suffers pain in stomach on taking food. Evacuations from bowels of a bloody, stringy, mucoid character, and very offensive and putrescent. After twenty-four hours the stools were fewer in number and the tenesmus was lessened. Hemorrhoids appeared, which were painful and protruded on defecating. By the 22d of October his condition was considerably improved. The stools were but few in number and had lost their putrescent odor. But little abdominal tenderness, and can take food (milk) with less pain. From this date he gradually improved. There was blood in stools until the 24th. The attacks of pain in the umbilical region continued until the 28th of October. His temperature was above normal but three days after I first saw him. He made a good recovery.

Case III.—On October 20 my attention was called to Marion ——, another brother. He was ten years old. He had commenced to complain with diarrhœa and dysenteric symptoms after my departure on the previous day; has mucoid, bloody evacuations from bowels; has no fever; pulse rapid; complains of no pain; slight tenderness in umbilical region; is not sick enough to go to bed; has had from twelve to fifteen passages from bowels in past twenty-four hours. On the third day of attack he passed quite a number of *Oxyuris vermicularis*. In five days he was convalescent.

Case IV.—Ida ——, nine months of age, was taken, on the evening of October 22, with diarrhœa. On the morning of the 23d her condition was as follows: Pulse, 148; temperature, 104° F.; respiration, 40; restless and nervous; nurses but little; pupils dilated and do not respond readily to the light; abdominal tenderness; stool about every half-hour, which was watery, bloody, and mucoid, small in quantity. From the time treatment was instituted symptoms were for the better. The temperature did not reach normal until the 26th of October. There was blood in the stools until the 28th. Made a good recovery.

Case V.—On the 24th of October, Laura ——, aged nine months (twin sister of Case IV.), was found in the following condition: Pulse, 120; temperature, 102° F.; respiration, 28; diarrhœa; evacuation every hour of a watery, bloody, mucous character, not profuse or very offensive; tenderness over abdomen; nurses well and sleeps well. From this date on she gradually improved. Temperature fell to normal on the 26th. Blood in the stools continued until the 28th. She made a good recovery.

Case VI.—John W., aged forty-eight, father of the family, commenced complaining to-day (October 24) with pain in the bowels and general malaise; has several ulcers over hard palate and pillars of the fauces; no diarrhœa. On the following day had a pharyngitis and pain through thorax on course of œsophagus; tenderness over pylorus; tongue pointed and red; has a rise in temperature of two degrees; pulse, 100. On the 26th his symptoms were the same. He passed quite a number of *Oxyuris vermicularis*. By the 28th his condition was improving, and it was but a short time until he was again at work.

The treatment of these several cases was entirely symptomatic,—astringent, demulcent, anodyne, or stimulating, as the symptoms indicated. The diet was milk.

If I should terminate my paper here, you would perhaps be as much at a loss to account for the symptoms in the above-outlined cases as I was during the first few days. Here were six cases of a gastro-intestinal disorder occurring in one family in a period of twelve days, with one death. What was the origin of the disease? What was its character? The character of the alvine dejections led me to believe the trouble was dysenteric. I examined the premises. The well was on a ridge, with ground sloping away from it. There was no other dwelling within one-half mile. The vault was on the slope below the well and some distance from it. Although I could find no source of contamination, I ordered them to discontinue the use of the water and carry all drinking-water from the neighbors, which they did. When the infants were taken with the same symptoms, and I was told they had not used anything to drink except milk, my search was directed to the food of the family.

I made strict inquiry into every article of food they had used for two weeks prior to my being called. Among the food products, and the one that aroused my suspicions, were tomatoes, and the mother informed me that the child that died was very fond of them, and had eaten heartily of them before getting sick. Further, the mother stated that one child (eight years) and herself were not fond of tomatoes, and had eaten none. Neither of them had a symp-

tom of the disease. The following is a history of the tomatoes: They were canned during the tomato season in cans that had contained peaches. Being sealed with wax on a flat surface, they would not remain tightly closed. They had been heated again and sealed for a third time. "Getting out of patience," as the mother expressed it, "because they would not keep, I concluded if we could not keep them in one way we could in another, so we would eat them." One can of the tomatoes still remained untouched. These had been heated in company with those that had been eaten, and hence would contain the same chemical constituents. I secured this one and took it to a chemist, Dr. E. H. Allison, and asked that he test it for lead, tin, and arsenic. He reported that he found tin in comparatively large quantities and a small amount of lead. He did not make a quantitative analysis.

It is much easier to view cases retrospectively, and agree upon their diagnoses, than it is to determine fully upon the etiology and diagnosis of the case in the beginning or during the progress of the disease. The prevalence of dysenteric troubles in this section at this season of the year, the systemic disturbances of these cases, indicated by the pulse, temperature, and debility, the character of the evacuations accompanied with tormina and tenesmus, and the want of suspicion of any metallic poisoning, at once suggested dysentery as the disease.

It might be suggested that the cause of these symptoms after the ingestion of the tomatoes was due to the existence of a ptomaïne. It is true that the symptoms very closely simulate those due to poisoning from ptomaïnes, and were the cause wanting to account for the symptoms, we might take them into consideration. In these cases I do not consider it necessary to look further than the detection of large quantities of tin in these tomatoes for the cause.

We will leave it to the chemist to determine what salt of tin we had in these tomatoes, whether it was the mallate, acetate, tartrate, or chloride of tin, due to the action of these respective acids on the tin, or from an acid of fermentation. It is evident that the repeated opening of the cans played an important *rôle* in the formation of the salt of tin.

It is an undisputed fact that canned foods frequently contain tin, but the quantity is so small that no deleterious results follow. Walter Blyth ("Reference Hand-Book") states that he "found in some samples of canned fruit as much as 14.3 grains of stannous hydrate to the pound, and that the average amount in all examined was 5.2 grains per pound."

It has been urged that were there sufficient tin salts in the food to be deleterious, it would be unpalatable, and hence would not be eaten. Perhaps this is true in most cases. But it must be remembered that the general practitioner comes in contact with all classes of patients, the poor and the parsimonious rich, as well as the generous liver; hence it is well for us to be on the alert for this source of danger.

"There is now sufficient evidence to show that tin *compounds* are poisonous, locally and constitutionally. Having already proved experimentally that tin may be absorbed, and afterwards found in the tissues and urine, Ungar and Bodlander lately investigated the influence of tin on health. They used for their experiments frogs, rabbits, and dogs, introducing, partly by the stomach and partly subcutaneously, stannous chloride, the tartrate of tin and sodium, and the acetate of tin triethyl. They found that even the non-corrosive salts of tin, when thus introduced, caused toxic symptoms, ending in death. The results of repeating very small doses for some time were like those of other metals which gradually undermine the health, sometimes even causing death" (*Annual Univer. Med. Sciences*, 1888).

As a therapeutic agent, tin is obsolete. Stanni pulvis was an officinal preparation in the U. S. Pharmacopœia prior to 1850. It was classified as an anthelmintic, and was thought to act in a mechanical manner.

From the study of these cases I would come to the following conclusions:

1. Stannous salts are poisonous to the human system, being similar in their action to the other mineral poisons,—lead, zinc, arsenic, antimony, etc.

2. The salts of tin are anthelmintic as well as the powdered product.

3. Toxic doses of the salts produce symptoms similar to those from ptomaïnes.

4. Canned-food products may contain stannous salts in poisonous quantities.

5. The danger from this source is increased from exposure to the air; hence all fruits should be emptied from tin cans as soon as opened.

THE TREATMENT OF GONORRHŒA.

By H. M. Christian, M.D.,
Chief of Genito-Urinary Clinic, University of Pennsylvania, service of Dr. Edward Martin.

THE commonly-recognized treatment of gonorrhœa, described in text-books on venereal disease, and taught in our medical schools, consists in the administration of alka-

line diuretics in the first stage of the disease, followed by mild injections during the stationary period, and the employment during the subsiding period of balsamic remedies internally, together with the use of strong injections.

Up to a comparatively recent time this was the line of treatment pursued at the Dispensary for Genito-Urinary Diseases, of the University Hospital.

Patients appearing in the first week of the disease were put upon a restricted diet, and were given internally some alkaline diuretic, either acetate of potassium or bicarbonate of sodium. By far the great majority of the patients, upon their first visit to the dispensary, were found to be in the stationary period of the disease, and these were at once put upon the use of some one of the many injections employed in the dispensary, those chiefly used being either a solution of nitrate of silver (1 to 3000) or one containing subcarbonate of bismuth and hydrastis (colorless). In addition to the use of this injection, some one of the balsamic remedies—either copaiba or sandal-wood—was given internally. In the subsiding period, stronger injections, containing lead and zinc, were employed.

Under this treatment the great majority of the cases were cured in from four to six weeks, no case being considered as cured unless there was a continued absence of the morning drop, and the urine, on examination, was found to contain no "clap" shreds.

The two most frequent and troublesome complications were (1) posterior urethritis,—*i.e.*, extension of the disease backward into the posterior urethra,—improperly called cystitis of the neck of the bladder, and (2) epididymitis.

In one hundred and fifty cases of gonorrhœa treated in the manner just described, eighty-five were cured without the occurrence of either of these complications. In fifty-two of the cases posterior urethritis developed, and the injection had to be discontinued for a time. Epididymitis occurred in thirteen of the cases.

In the fall of 1891 it was determined to pursue a totally different line of treatment, and the method of cure adopted at that time is still in use in the dispensary. All patients with acute gonorrhœa are now put upon the internal use of balsamics at their first visit to the dispensary, and these are kept up in increasing or diminishing doses until the end of the third or fourth week. No injections whatever are used until the subsiding period of the disease,—*i.e.*, about the end of the third week,—when the discharge is thin and mucoid in character, with a tendency to glue the lips of the meatus together in the mornings.

In one hundred and fifty cases of acute gonorrhœa treated in this manner, one hundred and thirty-four pursued the regular course of the disease uncomplicated with either posterior urethritis or swelled testicle. In only twelve of the cases were there any symptoms of posterior urethritis, and epididymitis occurred in only four.

Summary of both Methods of Treatment.—Number of cases of acute gonorrhœa treated by injections at a comparatively early period of the disease, 150; uncomplicated with posterior urethritis or epididymitis, 85; developing posterior urethritis, 52; developing epididymitis, 13.

Acute gonorrhœa treated without injections till the subsidiary stage was well developed, 150; uncomplicated with posterior urethritis or epididymitis, 134; developing posterior urethritis, 12; developing epididymitis, 4.

After a comparison of the results obtained by these two methods of treatment, it would seem that there is but one conclusion to be drawn,—namely, that the use of injections, prior to the subsiding stage of acute gonorrhœa, acts, in quite a large proportion of the cases, as an exciting cause in the production of posterior urethritis and epididymitis, and on this account is not to be considered as the best treatment of the disease.

All patients at the venereal dispensary of the University Hospital are now put upon the internal use of a capsule, made by Parke, Davis & Co., containing five (5) drops of oil of sandal-wood and five drops of oil of copaiba, with one drop of oil of cinnamon. From four to eight of these are taken daily for the first three weeks.

When the "morning drop" persists, an injection of sulphocarbolate of zinc and hydrastis is used.

It is not claimed for this plan of treatment that it in any way cuts short the duration of the disease, but only that it aids in preventing the frequent occurrence of posterior urethritis and epididymitis, the two most troublesome complications of gonorrhœa.

THE DETECTION OF LEAD IN URINE.

By Lee K. Frankel, Ph.D.

DURING the winter of 1891–92 the author, while investigating some cases of supposed lead-poisoning, had occasion to require a method whereby lead could be accurately and, what was

of equal importance, rapidly detected in the urine. As far as accuracy was concerned, the methods recommended by Victor Lehmann (*Zeitschrift für Physiologische Chemie*, vi. 1) were found to be thoroughly satisfactory, but it was hoped that a modification of his electrolytic method could be devised which would shorten the time limit of the process. Unfortunately, the desired end was not attained, since the results are altogether of a negative order. These, however, show a sufficiency of new and interesting data to warrant their publication.

In the article above referred to, Lehmann states that lead may be detected electrolytically in urine, either with or without previous destruction of the organic matter present there. The best results are given when the organic matter is first destroyed. He uses in his investigations the apparatus devised by Bloxam (*Chemical Society Quarterly Journal*, xiii. 12) for the electrolytic detection of arsenic. The apparatus consists essentially of a jar, which is closed below with parchment, and in which the solution to be examined is placed. The jar stands in an outer vessel which contains sulphuric acid. In Lehmann's apparatus, the platinum electrode which is attached to the negative pole of the battery dips in the outer vessel, while that attached to the positive pole enters the jar. He states that with such an arrangement the lead present in the urine deposits as peroxide on the positive pole.

To ascertain how minute the quantity of lead in a solution might be, and still show as peroxide when the solution was electrolyzed, the author made the following determinations: In a platinum dish, connected with the negative pole of a battery, 100 cubic centimetres of water and 1 cubic centimetre of a lead-nitrate solution were placed. To these 3 cubic centimetres of concentrated nitric acid were added. The positive electrode was now introduced directly into the solution, and the latter electrolyzed with a current generating 1.4 cubic centimetres of oxyhydrogen gas per minute. At the end of thirty minutes the deposit of peroxide of lead on the platinum foil was already very distinct, and at the end of several hours had the usual dark-brown appearance of the lead-peroxide deposit. The lead-nitrate solution used was of such a strength that in the solution finally electrolyzed 1 part of lead was present in every 100,000 parts of water.

Two more experiments were made with solutions containing 1 part of lead to 500,000 and 1,000,000 parts of water respectively, the amounts of nitric acid and the strength of current being the same as in the preceding experiment. The deposits of lead peroxide on the platinum foil, while very faint, were still distinctly recognizable.

The delicacy of this electrolytic test led the author to hope that the presence of urine would not materially interfere with the deposition of the peroxide of lead. The following experiments will, however, show that the results obtained were radically different from those which were anticipated from the above action of the lead solution.

To 100 cubic centimetres of urine 1 cubic centimetre of a lead-nitrate solution (containing 1 milligramme of lead) and 10 cubic centimetres of concentrated nitric acid were added. The solution was put into a platinum dish and electrolyzed for twenty-four hours with a current generating 1.4 cubic centimetres of oxyhydrogen gas per minute. At the expiration of that time, to the author's surprise, no peroxide of lead had deposited on the positive electrode. The current was then allowed to act forty-eight hours longer. Even then no deposition was noticeable on the positive pole, but on the platinum dish (the negative electrode) a metallic deposit resembling lead had formed. The quantity of the deposit, however, was so small that it did not respond to the ordinary tests for lead.

130 cubic centimetres of urine and 2 cubic centimetres of the lead-nitrate solution, the free nitric acid in this case being omitted, were similarly electrolyzed, with the difference that in this determination the platinum dish was made the positive electrode and the platinum foil the negative electrode. After electrolyzing for twenty-four hours with the same strength of current as before, a grayish-brown, spongy deposit was found on the platinum foil. This was carefully washed with water, dissolved in nitric acid, and the solution evaporated to dryness. On dissolving the residue in hydrochloric acid, and passing hydrogen sulphide gas through the solution, the characteristic reaction for lead was given. No deposit was found on the positive pole. The experiment was repeated, using varying amounts of the lead-nitrate solution, and in every case was a similar deposit found on the negative electrode, which gave the confirmatory reactions for lead. At no time was a deposit found on the platinum dish,—the positive electrode.

While these results were satisfactory for the detection of lead in urine to which a lead solution was directly added, results entirely different were obtained with urine in which the lead that was present had been previously assimi-

lated by the system. Fortunately, for this purpose it was not necessary to inject animals with a lead solution, as the urine from several cases of acute lead-poisoning (both before and after treatment with potassium iodide) was placed at the author's disposal by the officers of the University Hospital. In all the samples of urine (some twenty-five in all) that were examined for lead by the electrolytic method just given, both with and without the presence of nitric acid, in no case was a deposit found on either the positive or negative pole sufficiently large to give a confirmatory reaction for lead on dissolving the deposit in nitric acid, evaporating the solution to dryness with hydrochloric acid, and then adding hydrogen sulphide. In one or two cases the current was allowed to run for five days, and increased to 3 cubic centimetres of oxyhydrogen gas per minute. The oxidizing action of the current was so strong that at the end of this time the scum and mucus which separated on the surface of the solution during the earlier passage of the current had entirely disappeared. Even then no deposit was found either on the dish or on the foil that would react for lead. That lead was present in these samples of urine was proved by taking the solutions on which the current had no effect, and rapidly oxidizing the organic matter present with potassium chlorate and hydrochloric acid. When the solution had become colorless, the excess of hydrochloric acid was evaporated, and hydrogen sulphide gas passed into the solution. The precipitates that were thus obtained were redissolved in nitric acid, and further tested for lead with sulphuric acid and potassium chromate. Every sample of urine examined in this manner showed the presence of lead.

These results are of interest, since they show that lead salts passed through the system are, by the time they become components of the urine, of such a composition that they cannot be decomposed by any but the strongest reagents. In the cases cited the lead is probably in combination with the organic acids present in the urine, and in such a stable form that a current of the strength used is not sufficient to break up this combination into its constituents.

For detecting lead in urine, the author has invariably obtained good results by first oxidizing the organic matter with potassium chlorate and hydrochloric acid. If desirable, the lead can then be determined electrolytically, as advised by Lehmann. This method, however, is time-consuming. The test for lead with hydrogen sulphide is not alone rapid, but so delicate that preference would be given to it, particularly where the amounts of lead present are small.

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A SIMPLE METHOD OF EVACUATION APPLICABLE TO THE TREATMENT OF PYOSALPINGITIS AND COLLECTIONS OF FLUID IN THE CAVITY OF THE PELVIS.

VULLIET (*Revue Médico-Chirurgicale des Maladies des Femmes*, November, 1892) states that for a long time he was in the habit of treating all cases of pelvic suppuration by hysterectomy, but within the last two years he has operated by a simple method in eighteen cases. Paracentesis forms the basis of the author's treatment.

The technique of the operation is as follows: The same antiseptic details are to be carried out as for laparotomy or hysterectomy. The patient should be placed in the sacro-dorsal position, the operator standing on the side corresponding to that of puncture. The leg of that side should be placed over the shoulder of the operator, so as to incline the pelvis to the opposite side; then by the combined examination the region of suppuration is mapped out. If discovered, the assistant should place his hand on the abdominal wall over the abscess and make downward pressure, and at the same time takes his turn at holding the leg of the patient upon his shoulder. A trocar is then plunged into the abscess cavity and the pus drawn off. The assistant still continues the abdominal compression, so that all the pus may be evacuated. To be certain that all the fluid has been drawn off, a puncture should be made at another point. If, in the course of ten or twelve days, the liquid is reproduced, the trocar is again used, the liquid drawn off, and the cavity washed out with five or ten cubic centimetres of sublimate solution (1 to 1000).

If the liquid should still be reproduced a third or fourth time, the cavity should be incised and tamponed with iodoform gauze.

Of the eighteen cases, only three required incision and drainage; all the cases, however, recovered.

Concurrent with the operative treatment, active antiphlogistic and resolvent treatment should be employed.

The author does not believe in tamponing the uterus for the purpose of draining the tubes.

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Leading Articles.

HOMATROPINE FOR THE CORRECTION OF ERRORS OF REFRACTION.

EVER since homatropine was introduced to the profession, its value as a paralyzant of the ciliary muscle, and consequently its value as a revealer of the whole error of refraction, has been occasionally questioned. If a vote were taken among the practical ophthalmologists who have employed this drug for the purposes stated above, those who have trust in its virtues would probably be found in the majority; but nevertheless the query, Does homatropine, as generally used, reveal the whole error of refraction? remains to a certain extent unanswered, and there can be no doubt that Dr. W. Franklin Coleman, who discusses the subject in the *Annals of Ophthalmology and Otology* for January, 1893, is correct when he states, "The opposite answers of equally competent observers are evidence that the above question is unsettled."

It is difficult to understand why there has been so much diversity of opinion, not only among those who have given the experience of their consulting-rooms and of their practical work in the estimation of errors of refraction, but also among those who have with the utmost care tabulated their cases and compared the results of homatropine with atropine, or with other of the stronger mydriatics. The testimony of Risley, Jackson, Randall, Ayres, Hotz, and numerous other ophthalmic surgeons is so positive in regard to the efficiency of this mydriatic, and their accuracy as observers so unquestioned, that the reasons for the discrepancies are not at once apparent, especially when antagonism to homatropine is championed by Oliver, Holt, Coleman, and others, who have carried out researches similar to those which seem to prove the undoubted value of the drug.

There is something suggestive in the title which Dr. Coleman uses: "Does homatropine, as generally used, reveal the whole error of refraction?" Perhaps as "generally used" it *is* unsatisfactory, and we may believe with Dr. Jackson that those who use homatropine and find it unsatisfactory, use it in a different way from those who find it satisfactory. It is, of course, not possible to know how each ophthalmic surgeon uses this mydriatic, but as Dr. Coleman particularly states that he followed the plan advocated by Dr. Jackson, and still was disappointed, it cannot with propriety be said that his method was other than that which those who advocate the drug have found efficient.

Certainly only one method yields accurate results,—namely, cumulative instillations of the drug, or, in other words, repeated instillations at short intervals. In patients over twenty years of age, with the exception of the cases of spasm of accommodation and of certain examples where the ophthalmoscope reveals pronounced retino-choroidal irritation, the result of long-continued eye-strain, the following plan of administering the drug has proved eminently satisfactory in hundreds of cases. A neutral solution of one grain to the drachm is procured, of which one drop is instilled into each eye on retiring the night before the day on which the examination is to be made. The next morning one minim of the same solution is dropped into each conjunctival sac every fifteen minutes for an hour and a half, and forty-five minutes after the last morning instillation is made the patient is

placed before the test-types and the refraction tested in the usual way. At the close of the examination another instillation is made, and the examination repeated at the end of another forty-five minutes. This is practically the method of examination which Jackson has advocated, and was also that employed in a study of the physiological action of the drug recorded in the *Medical News*, December 24, 1887. The results of this research were exactly in accord with those which had previously been reached by Jackson, Risley, Randall, and the other observers who had found the drug efficient.

Three points in this method deserve emphasis: First, that a drop shall be put into each eye at bedtime on the night before the measurement is to be made. This quiets the accommodation to a certain extent, and permits the repeated instillations on the following morning more certainly to paralyze the action of the ciliary muscle. Second, that the directions in regard to the repeated instillations shall be accurately followed, and to secure this it is wise for the surgeon himself to instil the drug. Third, that the trial of the refractive error shall be made not before forty-five minutes have elapsed, and not later than sixty minutes after the last instillation.

There is no doubt that these cumulative instillations produce some smarting of the conjunctiva, and often distinct injection of the posterior conjunctival vessels, although much of this irritation may be avoided, as Oliver has pointed out, by securing a perfectly neutral salt. A slight gray haze has been described in the fundus oculi, and the choroid is said to become woolly under the influence of these instillations; but changes of this character in the eye-ground are so readily seen or not seen, according to circumstances, or perhaps we had better say, are so certainly seen after the pupil is dilated, while they may have escaped attention before mydriasis, that their exact relation to the use of the drug is not definitely ascertained. Even admitting their presence, which seems undoubted in some instances, so far as we have been able to ascertain, save in the exceptions already quoted, they are of no moment; they do not interfere with the determination of refractive error, and invariably disappear by the time the effects of the drug have subsided.

No doubt, as Dr. Coleman says, it is at present impossible to reconcile the various discrepancies, but we cannot help believing that these depend in some way upon differences in the method of employing the drug. It is quite possible also that we do not always obtain homatropine of a standard quality. The recent capital observations of Risley in regard to hyoscyamine in this respect are worthy of repetition with reference to the hydrobromate of homatropine.

THE USE OF ACONITE IN VARIOUS FORMS OF CARDIAC DISORDER.

BY far the larger number of patients coming into the physician's office with the belief that they are suffering with heart-disease, are in reality subjects of functional disorder of this organ, produced by over-indulgence in tobacco, alcohol, or other habits, or by excessive exercise followed by excessive rest; or, finally, by disorders of the digestive apparatus.

Very few of those who really have organic cardiac disease appreciate that such lesions exist in their bodies, unless they have been told so by competent physicians, and nothing is more common than to find that the patient has attributed symptoms in other portions of his body to local disorders, whereas in reality an examination of the heart, which he believes to be healthy, shows the physician that the trouble lies in this organ.

Putting to one side the well-known fact that the mere existence of valvular disease of the heart does not indicate digitalis unless there are evidences of lack of power and hypertrophy, let us consider for a moment the value of aconite both in functional and organic cardiac disease. We will not speak of its employment in the acute diseases of the endo- or myocardium.

Those who are in the habit of seeing young men will constantly have their attention called to the condition of shortness of breath on exertion, palpitation or violent pulsation of the heart, and in some instances the development of severe symptoms which, at first glance, may seem to be those of true angina pectoris. In many of these youths there will be a history of the excessive use of tobacco, or that they have left college, where they have been indulging in severe athletic exercise, such as running or bicycle-racing, and have gone into business where they lead a most sedentary life. In these cases the condition which exists is comparable to the condition which exists in a steamer whose engines are too strong for her. The heart, which has heretofore been supplying the body of an athlete with blood, now finds itself too strong for the sedentary individual, and the symptoms

which we have named are at once produced. There is probably no remedy which will give such good results under these circumstances as aconite given in the dose of 1 minim of the fluid extract, or 2 minims of the tincture, three times a day, particularly if at the same time a good belladonna plaster about four inches square is applied over the præcordium. Many cases of tobacco-heart, in which there is arhythmia, with an excessive cardiac impulse over the præcordium, with palpitation on exertion, will be benefited by aconite used in this way; but where the heart seems much depressed, so that the apex-beat is feeble and the first and second sounds are not clearly heard, aconite will seldom, if ever, do good.

In that form of functional cardiac disorder due to indigestion, aconite is not capable of producing the results which are obtained in the cases which we have just mentioned. It may, however, be used as a remedy of value at the same time that the physician is directing his attention to the cause of the trouble,—namely, the gastro-intestinal disorder,—with the treatment of which this editorial has nothing to do. Here, again, a condition of cardiac feebleness contraindicates the employment of this drug.

Passing to the employment of aconite in cases of true cardiac disease, we find that a careful study of a certain number of cases will soon show the physician that this drug is capable of doing more good in some instances than is digitalis.

The history of the following case illustrates this point: A man, aged nineteen, was brought to the hospital suffering from aortic obstruction, and, as a result of this, was attacked with dyspnœa on the slightest exertion, marked cardiac arhythmia, with palpitation, some giddiness, and a tendency to nose-bleed. He stated that in the early part of the year, and for several years preceding it, he had been a deck-hand on a coastwise vessel, where he performed hard manual labor, notwithstanding the condition of cardiac disease which was present, and of which he knew nothing. During this time he suffered from no symptoms indicating cardiac disorder. In other words, compensatory hypertrophy was complete. Because of the exposure incident to the work, he was forced, under the advice of a physician, to earn his living on shore. He was unsuccessful in trying to obtain employment, and a prolonged period of muscular inactivity followed. As a consequence of this, the cardiac hypertrophy, which had hitherto been compensatory, was now excessive, and he suffered from marked cardiac palpitation, with disordered circulation in the extremities, and from a considerable amount of cough. Very early in the study of the case it was recognized that these disorders were due to the excess of cardiac hypertrophy, and not to failure in compensation, and, as a consequence, that a cardiac depressant was indicated rather than a cardiac stimulant in the shape of digitalis.

He was given from 1 to 2 minims of the fluid extract of aconite three times a day, and during the continuance of this treatment was purposely confined to his bed. At the end of the week so much improvement had taken place in his condition that he was allowed to rise and go about the ward, as he wished, and after four weeks, the medicine being continued during this period, he was so well that he was discharged from the hospital, with no other evidence of cardiac disorder than physical examination would show.

Many instances of the value of aconite in both functional and organic cardiac disease could be cited, but these are probably sufficient. Where the aconite alone fails to give relief, rest in bed is essential in order that the heart may not be excited to great activity by exercise of the limbs, and also because the recumbent posture allows the physician to use larger doses of the drug.

GONORRHŒA IN CHILDREN.

IT is, perhaps, not generally recognized that purulent discharge from the urethra of a male child is generally gonorrhœal in nature. This is unfortunate, since such a discharge is highly contagious, especially to other children, and if carried to the conjunctiva of either the patient or those about him will excite an acute inflammation which in a few hours may occasion irreparable injury to the eye. It is generally believed that such discharges are catarrhal in nature and are due to a depressed state of the system, to extension along the urethra of a balano-posthitis associated with phimosis, to irritation incident to the passage of acid urine, to congestion dependent upon masturbation, to inflammation carried by the insertion of foreign bodies into the urethra, or to any one of a dozen forms of chemical or mechanical irritation. While it is undoubtedly true that a foreign body introduced from without into the urethra, or that calculi passed along this mucous canal will excite inflammation and discharge, such discharge is ephemeral and will promptly disappear on removal of its immediate cause. When a perfectly healthy child, even though he be but a few months old, has a free puru-

lent discharge from the urethra which for some days increases in severity, the case must be regarded with suspicion. This suspicion will be strengthened if there be ardor urinæ, swelling of the lymphatic vessels of the penis and the glands of the groin, œdema of the prepuce, signs of irritation at the neck of the bladder, or epididymitis. The last doubt is removed by the discovery of the gonococci. Whether the child be still in its first few weeks of life or old enough to know some evil, whether or not every possible source of venereal disease apparently can be eliminated, if the specific micro-organisms are found the case is one of gonorrhœa, should be treated as such, and precautions should be taken so that others cannot be affected, as by the bath, bedclothing, washing towels, etc. The method of acquiring gonorrhœa is in these cases most obscure. Cseri reports the case of a four-year-old boy supposed to be suffering from a simple catarrh of the urethra, who infected his eight-year-old sister. Martin records a similar instance of infection at about the same age, except that the girl first acquired the disease from a boy of her acquaintance, then transferred it to her little brother. Róna (*Archiv für Dermatologie u. Syph.*, xxv. Jahr, Heft I. u. II.) treated two brothers, aged respectively eight and thirteen and a half years, and shortly after had under treatment for the same disease their two sisters, one aged ten years, the other six.

The gonorrhœa of male children may occur at an exceedingly early age; thus one child was infected when it was but fifteen days old. Róna reports a case fifteen months old complicated by double epididymitis. It is mostly observed between the first and seventh year. The complications are much the same as those noted in the adult: prostatitis, signs of vesical irritability, and epididymitis have all been recorded.

The inflammation is rebellious to treatment, and is liable to become chronic.

Its treatment is conducted upon the general principles the application of which has given the best results in men. In the florid stage, prolonged hot baths and the administration of alkaline diuretics; as the disease subsides, the employment of mild antiseptic and astringent injections, such as nitrate of silver 1 to 8000, bichloride of mercury 1 to 12,000, carbolic acid 1 to 300, and in the later stages, fluid extract of hydrastis 1 to 30, and sulphocarbolate of zinc 1 to 200. The disease in children very frequently invades the mucous membrane of the posterior urethra. In such cases it may be necessary to resort to irrigation practised by means of small rubber catheters, or to instillations into the posterior urethra. As a result of chronic urethritis strictures sometimes form, but these are exceedingly rare.

In female children a vulvo-vaginitis, non-gonorrhœal in nature, is much more common than is a simple urethritis in male children. This is in reality mostly a vulvitis, the vagina not being involved, and corresponds rather with balano-posthitis of the male than with urethritis. As is the case with balano-posthitis, such a vulvitis may be excited by dirt, or by mechanical or chemical irritation. It is very frequently associated with seat-worms, and develops after exanthemata such as scarlet fever. It is not contagious, at least not more so than any other discharge containing pyogenic organisms. An important fact to bear in mind is that this simple vulvitis almost exactly simulates the early stage of gonorrhœal urethro-vulvo-vaginitis. Martin (*Journal of Cutaneous and Genito-Urinary Diseases*, November, 1892) has shown that when the urethra and vagina are involved in the inflammatory process the typical gonococci are nearly always found in the pus.

As it has been claimed that the micro-organisms found in the discharges of young children suffering from vulvo-vaginitis resemble gonococci in measurement, appearance, grouping, and staining reactions, but are not the same, Martin inoculated the urethra of a healthy man (he consenting) with discharge from a child, and produced typical gonorrhœa, which invaded the posterior urethra and was complicated by epididymitis. In the great majority of these cases, and this is true also of gonorrhœa as observed in male infants and children, the contagion is not due to sexual contact, but is conveyed by means of bathing-water, towels, etc. It is certainly true that in homes or hospitals for infants where the strictest cleanliness is not observed the introduction of one case is liable to be followed by the development of many. Gonorrhœa in female children lasts from three to five weeks, and during its florid stage occasions fever and local pain. There is often complaint of almost constant bellyache, and in one case examination through the rectum showed that the womb was swollen and tender. There is one reported case of peritonitis, doubtless due to extension of the inflammatory process by way of the tubes.

In any case of vulvo-vaginitis the discharge should at once be subjected to microscopic examination, since thus only can a diagnosis of gonorrhœal inflammation be made. The gonococci being found, such a case should be isolated, since the genito-urinary tract of children

seems to be peculiarly fitted as a culture-ground for these germs.

The local treatment consists in repeated irrigation of the inflamed region with warm antiseptic lotions, such as nitrate of silver 1 to 10,000, or corrosive sublimate 1 to 10,000. These irrigations should be copious and should be repeated twice a day. The vagina may be washed out by means of a soft, small rubber catheter inserted within the orifice of the hymen. The labia are gently dusted with very finely powdered zinc oxide, and are kept from coming in contact with each other by means of pledgets of absorbent cotton. It is safe to make no direct application to the urethra at first. In the subsiding stage this canal may be flushed out by means of a very small, soft rubber catheter.

Reports on Therapeutic Progress.

PATHOLOGY AND THERAPEUTICS OF DIABETES MELLITUS.

G. KLEMPERER (*Wiener Medizinische Blätter*, No. 28, 1892) gives an interesting review of the latest attempts to solve the pathology of this severe and obscure disease. The question what causes the abnormal amount of sugar seems to admit of but two answers. Either more sugar is formed or too little sugar is destroyed. What causes this formation, or diminished destruction, or by what means shall it be counteracted? He himself appears to reach no positive conclusion.

After going over the remedies usually prescribed,—opium, the salicylates, antipyrin, phenacetin, and the alkalies,—he dwells at length upon a suitable diet for diabetes. He thinks the mild and severe forms should be distinguished, regarding as mild forms cases in which the glycosuria disappears when the carbohydrates have been withdrawn for three days. But the most important thing is to see to it that the patient gets sufficient food. He needs at least two thousand "calories," and one gramme of albumin, or one gramme of carbohydrates and four of fat, each correspond to one "calorie." The mild cases are to be kept months at a time without sugar, but such carbohydrates as mannite, levulose, Iceland moss, etc., may be used.

Absence of all excitement is very important, while for those with sufficient strength, exercise is very wholesome, although it must be used with caution and not practised to the point of exhaustion.

CRYSTALS UPON THE SKIN, FOLLOWING THE USE OF SALOPHEN.

Crystalline deposits upon the skin, following more or less profuse perspiration, have only been seen in cholera typhoid; but DR. DRASCHE (*Wiener Medizinische Wochenschrift*, No. 29, 1892) gives a brief account of their appearance after the use of salophen. In using salophen, there is often a profuse perspiration which leaves behind it, after evaporating less than half an hour, a quantity of small, graceful, pointed crystals. They glimmer and flicker and glisten, in a good light, until some parts of the skin appear to be sprinkled with diamond-dust. Besides, the folds at the elbows and interphalangeal joints, the palm of the hand and the creases of the neck, especially in stout people, are filled with a white, shining substance, resembling asbestos. Although these deposits of crystals may be observed on all parts of the body, they are especially marked on the face, neck, breast, and both sides of the upper and lower extremities. They are found in smaller numbers in places more exposed to rubbing, as the back. They are seen best in a strong oblique illumination.

In all cases where perspiration has followed small or large doses (½ to 2¼ drachms per day) of salophen there also occurs this crystalline deposit upon the skin. As it always follows like doses, nothing can be said of cumulative effects. These tiny crystals can be gathered best with a thin, small knife-blade, and then they should be placed under the microscope upon a slide without any cover-glass. The microscope shows them to be almost of the same form as the salophen crystals. Their chemical nature has not yet been fully determined, on account of the difficulty in obtaining a sufficient quantity for examination. Probably these crystals are salophen itself or a product of its subdivision.

TREATMENT OF SCROFULA WITH CREOSOTE.

DR. JULIUS SOMMERBRODT (*Berliner Klinische Wochenschrift*, No. 26, 1892) warmly urges the use of creosote for scrofula. He has given it repeatedly where there were great gland bunches on the throat, and seen these very stubborn swellings grow smaller or disappear. Knowing that the earlier creosote is used for tuberculosis the better the results obtained, he has been specially zealous in giving it to children with scrofula. His results have been so satisfactory that he cannot commend it too highly. None of his patients have been under

seven years of age, but Sommerbrodt believes it could also be given pure to younger children without the addition of milk or wine, especially if the dose was made 1 drop three times a day to begin with, and then gradually increased until 7½ to 10½ grains daily had been reached. For children of seven years and upward it is easy to reach 15 grains daily, in from eight to ten days, either in drops or in capsules holding 1½ drops of creosote with cod-liver oil (not with balsam of tolu). An increase over 15 grains a day is seldom necessary, but could be used without scruple, if necessary. Creosote should always be given immediately after the three meals, as the empty stomach will not tolerate it, and the treatment with creosote must be continued during many months beyond the apparent cure.

Sommerbrodt's experience has been with scrofulous children who had no other treatment but the creosote; but, of course, the value would be just so much greater if used along with salt baths, a sojourn by the sea or in the country, the use of iodide of iron, or surgical measures. He believes that too small doses are valueless, and that large ones are not dangerous. Only very recently has the first case of poisoning from creosote been reported. This was a patient of Dr. Freudenthal, who had been treated with it for months with benefit, who took 2 to 2½ drachms of creosote in fluid form within two hours. The woman recovered after nine hours and had no further ill effects, although the creosote treatment was continued.

Sommerbrodt gave creosote to one patient, thirty years of age, gradually increasing the dose from 15 grains a day to 2 drachms daily in capsules, with cod-liver oil, during months. He had an excellent appetite, and his general condition continued good, while a good influence was exerted upon the local tubercular process in the lungs and larynx, and thirty pounds added to the weight.

Dr. Ziemssen reports satisfactory results from creosote as used in his clinic. His average dose was ¾ drachm daily.

THE TREATMENT OF ACUTE DYSENTERY BY ANTISEPTIC RECTAL AND COLON IRRIGATION.

Apropos of the article of Dr. Ball, published in the July and August numbers of the THERAPEUTIC GAZETTE, the following article by DR. W. W. JOHNSTON, in the *American Journal of the Medical Sciences*, of Washington, is of interest:

In the *Edinburgh Journal of Medicine*, in 1826, Dr. Joseph Kent, of Bladensburg, U. S. A., wrote that since 1823 he had employed ice-water injections for dysentery at half-hour intervals, "speedily alleviating every distressing symptom." In 1848, Assistant Surgeon Withecomb, in a Calcutta medical journal, reported two cases successfully treated by high injections with a long tube. But it is to the published opinions of Drs. O'Beirne and Hare that special attention should be paid. O'Beirne, in an article on "New Views of the Process of Defecation" (Am. ed., Washington, 1834, p. 35), held that in dysentery "the chief curative indication should be to pass up the gum-elastic tube and introduce it into the sigmoid flexure, in order to give exit to the accumulated and pent-up contents of the cæcum and colon." In an appendix he writes, "Dysentery having reappeared in this city (Washington), I have had opportunities of trying my novel mode of treating the disease." One to four pints of warm water with castor or olive oil were thrown in; hardened fæces, mucus, and flatus were passed, with relief of the symptoms.

Hare used these words, full of meaning to us now: "The substance of the whole argument is this: The long tube changes a huge internal abscess into an external one, and enables us to wash out and cleanse from it its putrid contents. It also enables us to foment and soothe by local applications the sloughing and ulceration these contents have caused on its surface. . . . Dysentery in its primary nature . . . is a mild and harmless disease, and . . . therefore if we remove quickly these acrid secretions, we shall disarm dysentery of its terrors." He advises the physician not to cease repeating the injection until he is satisfied that the colon is evacuated and cleansed: it is as necessary to wash out the colon when its contents are liquid as when they are solid. "By passing an elastic tube beyond the sigmoid," he says, "I have found not the slightest difficulty in washing out the colon from cæcum to anus. . . . In treating three hundred and forty-six cases in Calcutta, I had but thirty-three per cent. of deaths."

In 1879, Cantani, after treating of rectal alimentation, speaks of disinfecting the colon in dysentery and other diseases by such drugs as carbolic acid, salicylate of sodium, borate of sodium, etc., and predicts a great future for this kind of treatment.

Two causes have co-operated to draw renewed attention to rectal and colon antisepsis, —one is the growing belief in the specific and contagious nature, with the recent discovery of

the amœba of dysentery; the other is the dissatisfaction with other methods, and the effort to find in this disease a direct, rational, and successful treatment.

For three or four years past the journals have contained some favorable reports of this method. It will be noted, however, that few of them refer to irrigation; injection is the usual plan.

The latest communication is one that has been translated since the writing of this paper. It is by Dr. Korytin, a Russian. He refers to Dr. Strhogloo as having published, five years before, the results of his treatment of washing out the bowel with a five-per-cent. solution of carbolic acid. Sixteen cases are reported with excellent results. Dr. Kamper, in the same year, reported the same method in eighteen cases. Korytin employed warm water or warm carbolized water. One tube only was used, and the fluid (six pounds) was allowed to remain in the intestine five to ten minutes, even fifteen to twenty minutes. One to three washings were generally sufficient; sometimes four to six were given; never more than one daily. Nine of the cases were severe (diphtheritic); six were milder (catarrhal). The improvements noted after the injections were: The number of the stools diminished; the frequent desire lessened; appetite, sleep, and the nervous state were all improved. The fæces became thicker, lost their foul smell, and the mucus, blood, and particles of waste tissue disappeared; the fever subsided. In the mild forms the results were happiest. In them tepid water had as good an effect as the carbolized warm water. The history of each case is given in detail, showing that the improvement followed immediately upon the washing of the rectum, and that relapses due to its suspension were arrested at once by a return to the treatment.

In one fatal case after irrigation the stools were from twenty to twenty-five daily; tormina and tenesmus lessened, but the patient grew weaker and died; gangrenous lesions in the bowel were found. In many of the cases internal medication was tried, proved ineffectual, and recourse was then had to the washing. The duration of the case after beginning the treatment was three, and in the most severe cases seven, days.

The strong arguments for the superior advantages of antiseptic irrigation are found in the complete and successful manner in which it answers to the pathological conditions of dysentery: an intense inflammation, seated in the rectum, sigmoid flexure, and colon, and always more intense here, even when the disease extends higher up, characterized by gangrenous destruction of tissue and ulceration with decomposition, and accompanied and most probably due to bacterial multiplication. If these conditions existed outside the body there would be but one course followed,—the removal of the cause, if possible, then cleanliness and thorough antisepsis. Within the intestinal canal the typical treatment would be the removal of the cause or contributing cause, and cleanliness by thorough flushing of the bowel and antisepsis. There can be, there must be, but this one principle of treatment, and if the mechanical difficulties involved are removable, it must be the successful treatment.

There is one feature in dysentery to which separate attention should be drawn. It is this: The rectum and colon form a distensible cavity and are closed below by the sphincter. In dysentery this cavity, especially its saccular and most dilated lower portion, becomes the most distended, the most filled by the contents, which are composed of transuded serum, blood, decomposing shreds of tissue, and the results of digestion, the whole being in an active state of disintegration and filled with multiplying bacteria. The sphincter, as a result of neighboring inflammation and œdema, acquires great irritability, dilates frequently, but with irregular and spasmodic movement, and contracts quickly and violently, closing the orifice before the rectum is completely emptied. Thus the rectum becomes like an acutely-inflamed bladder. A certain quantity of its contents is expelled; a residuum is always left. In some cases the amount is small; in others—bad cases with much fluid—it is large. The rectum is never emptied, but always contains some fluid in a state of active decomposition. In this condition, as in a distended bladder full of decomposing urine, the first indication is to empty the rectum, and the second to wash out the cavity and to keep it empty and clean.

If this statement is true, it has a most important bearing on the nature of dysenteric symptoms and on the kind of treatment which they require. Johnston has found no reference to the fact in any work on medicine or in any medical contribution on the subject, although, in the enormous mass of literature on dysentery, the failure to find such a reference might well be excused. That it is a fact has been demonstrated; and although it may not be an essential feature in all cases, yet in a large number, and those the most severe, it is a constant condition.

The patient whom we see straining at intervals of a few minutes in his violent efforts to empty the rectum, does not empty it, the very

intensity of the muscular contraction defeating this object. The sphincter shares in the irritability of all the rectal muscles, and closing spasmodically, shuts off the escape of the contents before the act is accomplished. The result is also in part brought about by the patient lying down while straining, and the more feeble from prolonged illness he is the more likely is the rectum to be incompletely voided. Moreover, the routine treatment in dysentery helps to aggravate this retention. Opium suppositories paralyze expulsive muscles, but do not relax the sphincter; the number of actions is lessened and they are smaller, but the dangers are increased in proportion to the apparent success of the treatment, and the more severe the case and the more energetic the treatment the greater is the danger. In graver forms we have the more abundant, dirty-white, purulent, and fetid diphtheritic dysentery. The abundance of fluid favors its retention and accumulation, and every opportunity is given for the absorption of poisonous materials and systemic infection. Under such circumstances can any course seem more unreasonable than the ordinary treatment adopted, and can any course be reasonable except one which applies general and accepted principles to the peculiar physical conditions of dysentery? Keep the colon and rectum empty and clean; that is the law and the whole gospel.

Methods of Irrigation and Antisepsis of the Colon and Rectum.—In the earlier methods of rectal and colon treatment, water was thrown into the bowel, retained for a certain time, and then expelled. Some of the most excellent results are reported from this plan and within recent date. But this cannot but be an imperfect way of cleansing the bowel, although it answers well enough for bringing an antiseptic fluid in contact with the wall of the bowel and with germ-breeding mucus. The objection to it is the necessity of distending the inflamed coats of the bowel up to a point where injury may be done, if any considerable quantity of water is injected; its advantage is that by this distention the antiseptic fluid washes the inner wall more thoroughly than without it. The method is better fitted, therefore, for subacute cases, or those tending to become chronic, than for the acute inflammation, with necrosis of the mucous coat. Properly speaking, this method is not irrigation at all, and the only procedure deserving of this title is that in which there is a free and immediate escape of the water thrown in; and even without argument it is apparent that in this way only can the bowel be thoroughly emptied and made aseptic.

The mechanical difficulties are very much greater in the efforts to irrigate the colon than in the case of the rectum. To wash the rectum, a double, in-and-out, hard-rubber tube, passed into the rectum five to eight inches, through which flows a current of water from a fountain syringe, answers the purpose well. The only objection is the pain which attends the introduction of a hard, inflexible instrument through the irritable anus. Two soft-rubber tubes passed side by side—the larger one for the escape-current—are more comfortable for the patient and better in every way. No. 17 English (29 French) is a good size for the smaller tube; the escape-tube can be two sizes larger. A large-sized soft catheter will do very well for the entering current. The double-current soft-rubber tubes are not so successful; their soft and thin walls are pressed upon by the sphincter, and escape of fluid is obstructed. Then, again, there is an advantage in having two separate tubes, as either can be pushed up or down as it is desired to wash different parts of the rectal wall; they are, therefore, to be preferred to any double-current tube. The disagreeable sensation of distending the anus passes away in a few moments, and the patient gets so much relief from the operation that he ceases to object. Preliminary cocaine application may be used if the suffering is great.

All that is needed, then, for this operation are a fountain syringe, attached to a small rubber tube or large silk catheter, and an escape-tube of large size of soft rubber, made long enough by the attachment of a long piece of tubing, so that the fluid escapes into a vessel on the floor. The hand holds and guides the tubes, and changes their position from time to time.

The colon cannot be distended with water or irrigated with the same facility. That water can be made to pass through the sigmoid flexure there can be no doubt; but the passage of a tube through the flexure into the colon is a difficult task. If this be tried on the cadaver with the abdominal wall removed, one can see how difficult it is. The end of the instrument must describe a complete curve on itself, as if it were about to tie itself into a knot. Even with the hand pressing on the passing instrument and guiding it, it is not easy to accomplish. It is clear from the experiments Johnston has made, that a partially-flexible tube, like the old-fashioned stomach-tube, should never be used, and that a small tube does not pass as readily as one which more nearly fills the bowel. Distending the rectum with water as the tube advances does not favor the passage as much as leaving the bowel empty. The tube finds its

way better along the mucus-covered mucous coat. This is only in experiments on the cadaver, when the eye is watching the process; the contrary is the general opinion of physicians from efforts on the living patient. But the turning of the instrument on itself in a cavity filled with water, when the end strikes against the wall, is very likely to happen, and can easily be mistaken for the onward progress of the instrument. In the rectum the finger introduced discovers the error of direction, but higher up it is not possible to do so.

The conclusion of many trials must convince any one that the attempt to make the instrument enter the descending colon as often fails as succeeds. The difficulties show that all colon irrigation must be done by one tube. Dr. Johnston tried the double-current stomach-irrigator, and has had constant failure: the closure of the lumen from twists of the tube or from outside pressure prevents the exit of the injected fluid; so that the only way in which this can be accomplished is to force half a pint or one pint of fluid into the colon, and then allow it to escape at once through the same tube; in this way the colon and sigmoid can be thoroughly washed out.

What are the indications for the choice of colon or rectal irrigation? In all cases of so-called catarrhal dysentery, where the stools are small, contain blood and mucus, and in all cases, mild or severe, where the general or local symptoms are relieved by washing the rectum, no attempt need be made to do more than this; for even when the disease extends into the sigmoid flexure and colon, the curative influence is transmitted along the bowel-wall upward, as gargling the throat benefits laryngeal inflammation. If the patient continues to have fever, delirium, great restlessness, or other symptoms of general infection, or if stools are large, thin, with a gangrenous odor, containing blood, mucus, and tissue-like shreds, then the attempt should be made to make the tube pass in the sigmoid for higher injection. If the patient is on his left side, with hips raised, a gentle current may pass from a raised fountain syringe into the colon, even if the point of the tube has not passed beyond the first curve of the flexure. There is danger of perforating an ulcer, even without much force being used, so that the operation should be done with the greatest gentleness. In the great majority of cases of dysentery, as we see it, rectal irrigation may, by continuing experience, be proved to be all that we need to gain the desired end.

The quantity of water used depends upon the circumstances of each case. As a rule, it should pass in and out of the bowels until it runs clear, and in the case of both the colon and the rectum the amount thrown in should be equalled, or almost equalled, by the amount which escapes; if the egress is not free, the operation must be stopped until the trouble is remedied. There need be no limit to the quantity of water.

The frequency of irrigation is to be regulated by the number of stools, state of decomposition in the bowel, and other conditions. A good rule is to try to prevent the patient from having any stools at all; let his bowels be emptied only at your command through the inserted tube; at first once in three hours, later three times daily, as the outflowing fluid contains less blood and has less odor. Keep the rectum empty and clean is the one rule.

At first wash the bowel once in three hours, later three times daily, and so on with diminishing frequency, as there are less odor, less blood, and finally less mucus. When mucus is no longer seen in the form of thin flakes, the patient may be said to be well; but for a few days one daily irrigation serves a good purpose. Relapses should at once be met by a return to local treatment.

As an irrigating fluid, water may be used plain, hot or cold, or may contain in solution any of the numerous antiseptics. Extreme cold or very hot water may be injected, but both must have a more or less irritating effect, and their action, in the nature of things, is intermittent. If a continued current of cold or hot water could be kept on the inflamed surface, the case would be different. The surgeon would not apply great heat or cold for five minutes to an inflamed ulcer of the skin, and then leave the ulcer alone for three or more hours. It may be practicable to keep water flowing in and out of the rectum for many hours, but few patients could bear such continual distention of the sphincter.

Almost every antiseptic has received warm recommendation. Fifty-three cases of acute dysentery were treated at the Military Hospital at Oran with a 1 to 5000 bichloride solution. After the first day the stools were fewer in number, and in three or four days the mucus disappeared; tenesmus and pain were soon lessened.

Lemoine treated fifty-four cases of dysentery with solutions of corrosive sublimate (1 to 5000). Six ounces were injected into the rectum twice daily; later a solution of the strength of 1 to 3000 was injected twice daily. The fluid was not retained longer than ten minutes. Improvement followed immediately, and acute cases were

cured in from one to three days. No systemic poisoning in any case.

Notwithstanding all this favorable testimony, the dangers of ulceration in the colon being set up by the remedy, and the grave doubts lately raised as to the value of corrosive sublimate as a germicide in just such conditions as exist in dysentery, deter one from using it at all. Under no circumstances should it be employed without an immediate outlet for the solution.

Tannin destroys bacterial life and renders ptomaïnes innocuous. It is recommended by Cantani for typhoid fever, and it may have as good an effect in dysentery for the same reason.

Salicylic acid, thymol, aseptol, sulpho-carbolate of zinc, alum, hydrochloric acid, carbolic acid, boric acid, the sulphites, and hyposulphites have all been used and advised, but no sufficient number of cases have been treated by any one of these as to lead to its preference over all other remedies of the same class.

Boric acid and carbolic acid are the only antiseptics used by the author frequently. The results have led me to think that the former, or both together, give all we want, and as Johnston believes that a great part of the benefit comes from the cleansing and complete emptying of the rectum, the least irritating and least dangerous germicide ought to be preferred.

MODERN CHOLERA THERAPEUTICS.

Dr. Wladimir Zaloziegki (*Wiener Medizinische Blätter*, No. 37, 1892) reviews the various treatments suggested by well-known authorities for cholera. We reproduce only such as have not already appeared in the Gazette. He thinks we are now so much better able to cope with this disease than formerly that we can face it hopefully.

Professor Ziemssen emphatically recommends the immediate use of calomel in treating cholera diarrhœa, beginning with two or three doses of 7½ grains each, followed by small doses of $\frac{5}{6}$ of a grain every two hours. Ziemssen recalls the excellent action of calomel in the beginning of typhoid, and also the equally favorable experiences in the fermenting diarrhœa of childhood, and thinks this is due to the well-known fact that a portion of the calomel becomes changed in the intestine to corrosive sublimate, and as corrosive-sublimate solutions have a fungus-destroying action in a strength of 1 to 30,000, it is easy to believe that the bacilli in the intestine are directly killed by the calomel. While finding it becoming that we should place confidence in the authority of Ziemssen, Zaloziegki thinks it not at all advisable to simply order calomel in every case or opium in every case. He thinks the cases should be carefully individualized, and strong, youthful individuals chosen for calomel, while children, feeble and aged individuals should be given opium. Personally he decidedly prefers the calomel when there is no contraindication, in which he would include diarrhœa which had already been running on for days; and would start the treatment with three 7½-grain doses in the course of three hours. This remedy, from old experience, admirably suits our present view of the cholera process. On the one hand, it acts in the upper portion of the small intestine as a fungus destroyer; and, on the other hand, in the sudden onset of cholera, there is always something contained in the intestine, the removal of which by the laxative action of the calomel is desirable.

Zaloziegki thinks well to mention also pure naphthaline in 7½-grain doses five to ten times a day, and subnitrate of bismuth in doses of from 7½ to 15 grains three times a day, although he does not desire them to find many adherents.

Hydrochloric acid already has many adherents and can be retained in use during the cholera diarrhœa. As a prophylactic, three doses daily of 10 drops each after meals are sufficient; during the prevalence of cholera diarrhœa, 5 to 10 drops every two hours.

On practical grounds the faith of the public in the effective action of the so-called "cholera drops" should not be disturbed. The Russian cholera drops have attained a certain celebrity. They are composed of—

> Tinct. opii camph., 6 parts;
> Vini ipecacuanhæ, 4 parts;
> Tincturæ valerianæ æth., 12 parts;
> Olei menthol pip., 1 part.

Sig.—15 to 25 drops in peppermint-tea every half-hour.

These drops are, as Ziemssen shows, especially excellent in their effect on the dread of cholera, and they may be recommended for use in every family, in case of illness in the night, for temporary use.

THE THERAPEUTICS OF TETANUS.

Professor P. Albertoni (*Therapeutische Monatshefte*, presents a tabulated list of one hundred and seventy-six cases of tetanus, with the remedy used and the result. His table covers cases treated during the past ten years,

and while making no pretension to completeness, is sufficiently so to be very instructive; for we learn from the table,—

1. That tetanus is not such a deadly disease as has usually been supposed.

2. That tetanus may be cured by many and very different remedies, which means, according to a well-known therapeutic maxim, that it often gets well of itself.

Of the tabulated cases, 21.1 per cent. died. According to Lormanni's official statistics of the tetanus patients treated in the Italian hospitals from 1882 to 1887, forty-four per cent. died.

Patients who survive the first week have a much better chance of ultimate recovery. It is worth noting that various new remedies—urethan, paraldehyd, salicylate of sodium, carbolic acid—have often acted very successfully. This shows that tetanus may be combated with a variety of remedies.

The treatment most lauded at present is that with the serum of animals which have been rendered immune, as discovered by Behring and Kitasato. Albertoni suggested, however, that the cases thus treated were the ones which would have recovered at any rate, for one case where a fatal result followed the injections was not reported. Dr. Finotti reports a case whose cure he ascribes entirely to the antitoxin, because no other remedy was used; but it may be remarked that an iodoform bandage was immediately placed on the wound. Lormanni considers this local treatment almost a specific for tetanus. According to the experiments of Vaillard and Bouget, by means of a local antiseptic bandage, the other micro-organisms which have crowded in with the tetanus bacilli are destroyed, and so an important factor eliminated from the destroying action of tetanus. If the clinical and experimental results are carefully considered, then chloral is still the preferable remedy, as it has given the best relative results both in lessening and soothing the pain and in aiding a favorable outcome. Verneuil maintains that during the campaign of 1870, by the use of large doses of chloral, he cured fifty per cent. of his cases. Carpenter and Todd report very favorable results from the application of ice to the vertebral column. This seems rational, as there is great hyperthermia in tetanus. The latest experiments of Richet with electric tetanus have established this fact. Gaglio has shown by experiment that animals poisoned with strychnine may be saved from a fatal dose by means of artificial cold obtained by applications of snow and cold bandages.

POWDERS FOR DYSPEPSIA.

According to *L'Union Médicale*, DUJARDIN-BEAUMETZ recommends the following treatment in dyspepsia:

℞ Subnitrate of bismuth,
Sulphate of magnesia,
Prepared chalk,
Phosphate of soda, aa ʒiii.

To be divided into 40 powders. One powder to be taken after each meal when dyspepsia, accompanied by belching and flatulence, is present.

THE VALUE OF CARBOHYDRATES FOR DIABETICS.

In the *Deutsche Medicinische Wochenschrift*, No. 33, 1892, DR. LEO presents his view of the proper way to nourish patients suffering from diabetes mellitus.

In most methods of treating diabetes the chief attention is directed to preventing or reducing to a minimum the excretion of sugar. To accomplish this end carbohydrate food is forbidden, and in most cases this regimen is followed by an improvement in the patient's condition. But this improvement is not always of long duration. Marked digestive disturbances occur, and the patient loses flesh in spite of the diminution in the excretion of sugar. If carbohydrates are again allowed to form, in moderate quantities, a part of the nourishment, the condition is often improved, even if the excretion of sugar reaches its former height. This has a double cause,—the appetite is improved by the change in diet, and the digestive organs are relieved from the burden of excessive quantities of albumin.

The *rôle* which the carbohydrates play in the food of the diabetic is doubtless a complicated one.

Dr. Leo has conducted some experiments which gave him the opinion that the carbohydrates, besides their harmful action in diabetes mellitus, may also have, in a certain sense, a favorable action. Hirschfeld observed a case in which the absorption of fat was improved by eating white bread. Troje holds, too, that when moderate quantities of carbohydrates are used continuously, the patient's power of assimilation improves.

Leo still thinks the reduction of the carbohydrates in the food of the greatest importance in the treatment of diabetes, and he would exclude them wholly in the beginning of the treatment. But he holds that, after a time, they may be allowed in moderate quantities with advantage, even in severe cases. When, and for how long, to allow this he thinks should

be strictly individualized. In general he allows it to be determined by the weight of the patient and the amount of urine passed in twenty-four hours. He thinks it a mistake to make the amount of sugar given off the only measure of the condition and treatment of the patient; for what will it avail to reduce the excretion of sugar to the minimum if the patient himself also fails increasingly? Only the careful consideration of the whole condition of the patient, and the belief that a portion of the carbohydrate food may be assimilated, even by severe diabetics, will prevent such mistakes in treatment.

THE TREATMENT OF ACUTE ENCEPHALITIS.

In the treatment of acute encephalitis, CROCQ (*La Presse Médicale Bélge*) recommends the application of six leeches behind the right ear, since the seat of the disease is thought to be especially on the right side of the brain. At the same time the following formula is advised:

℞ Calomel, 1 gramme;
Aloes, .30 gramme;
Sugar, q.s.

Mix, and make 3 powders. One powder every two hours.

This combination acts as a resolvent, purgative, and revulsive. In the course of a few days, according to indications, the leeches are reapplied and iodide of potassium is administered. As to diet, vegetable soups and milk are to be depended upon.

THE TREATMENT OF ALBUMINURIA.

After considering the dietetic regimen in regard to the treatment of albuminuria, G. SÉE (*Bulletin de l'Académie de Médecine*) concludes a lengthy article as follows:

1. Bleeding, dry cupping, and *blistering* are all therapeutic measures that tend to increase the albuminuria and the nephritic disorder.

2. *Sudorifics*, destined to enhance the action of the skin, such as lukewarm baths, massage, saline mineral waters, and vapor-baths, are, to say the least, dangerous measures. Internal diaphoretics, particularly pilocarpine, are toxic and too uncertain.

3. *Diuretics* are only useful in certain nephritic oligurias, and have no general application. They are especially contraindicated in interstitial nephritis. All diuretics are to be condemned, particularly the sodic alkalines, Vichy, Royat, and Saint-Nectaire mineral waters. Lactose may be employed, as it does not affect the kidneys directly.

4. *Purgatives* are no better than diuretics.

5. The *cardio-vascular medicaments*, such as digitalis, strophanthine, convallamarine, caffeine, and sparteine, have no special application; they rarely act as vascular agents alone, and are poisons to the kidneys, with the exception, perhaps, of caffeine and sparteine. The iron preparations, considered as tonics, such as the wine of quinquina, for instance, are sure to increase the nephritis.

6. The *vaso-motor iodides*, which are generally *vaso-motor dilators*, are only serviceable as antisyphilitic remedies, and are to be used in renal disease of syphilitic origin. They do not cause renal obstruction, since they are readily absorbed, although their elimination is not always certain.

7. The remedies recently brought forward are strontium and calcium.

The observations of Paul, Dujardin-Beaumetz, and those of the author prove that these therapeutic agents are of value. They may be prescribed as follows: Lactate of strontium, 4 grammes per day; bromide of strontium, 4 grammes per day; bromide of calcium, 4 grammes per day; chlorbromide, 4 grammes. The latter substance is of special advantage, as it does not cause symptoms of bromism.

THE ACTION AND USES OF IODIDE OF STRONTIUM.

A. MALBEC (*Les Nouveaux Remèdes*, September 24, 1892), who has studied the action of the iodide of strontium on the circulation, finds that the salt produces a momentary rise of the arterial pressure and an increase in the number of cardiac pulsations. These phenomena soon disappear, and if the ingestion of the drug is insisted upon, the arterial pressure falls, while the cardiac contractions continue to increase in number, accompanied with periodic and rhythmical variations. The author believes that the new remedy acts chiefly upon the vaso-motor centres and directly on the heart. It appears that the drug, in the first period, acts like the potassium salt, but less energetically. In the second period,—that is, when large doses are employed,—the stimulating influence of the strontium iodide is as decided as that exercised by the potassium salt. From the action of the drug under consideration, the author suggests that the remedy be applied therapeutically in those cases of heart-disease in which the potassium salt is indicated. It would be more advantageous especially when a prolonged use is called for. The writer refers to a case reported by Laborde. A woman, fifty

years of age, suffered from chronic endocarditis, accompanied with marked dyspnœa and attacks of angina pectoris. Iodide of potassium, administered for a long time, was of no avail. This was then substituted by the strontium salt, in doses of 1 gramme a day, subsequently increased to 2 grammes a day. This drug was well tolerated, and improvement in the general condition of the patient was observed in the first twenty-four hours. The changes continued to be favorable under the uninterrupted administration of the remedy. This result warrants the repeated trial of the new salt in other similar cases. The iodide of strontium may be prescribed in this manner:

℞ Iodide of strontium (c. p.), 40 grammes;
Distilled water, 300 grammes. M.

A dessertspoonful of this solution represents two grammes of the salt.

The following formula is perhaps to be preferred:

℞ Iodide of strontium, 30 grammes;
Simple syrup, 300 grammes.

The simple syrup may be substituted by that of bitter orange-peel.

THE FAILURE OF DIURETIN TO AVERT URETHRAL FEVER.

The following article by Dr. Keyes, of New York, is of interest, in that in a previous paper he highly praised diuretin. It will be remembered that in a previous number of the Gazette doubt was thrown upon the universal applicability of this drug. He says:

I feel it incumbent upon me to present a short note in retraction of the claims, or rather pretensions, of diuretin as a drug capable of averting urinary or urethral fever.

These pretensions I put forward modestly at the last meeting of the Society, in Washington, September, 1891, impelled by an unusually successful consecutive series of cases, in which, during a number of months, this drug had been freely used, and in which there had been no urethral fever.

I claimed nothing except the coincidence of result in a number of consecutive cases, and I promised to investigate further and to report at this meeting.

My report is simple; I need not delay you by detailing cases. In a sufficient number to break all claim for reliability I have administered diuretin freely, and used other precautions, and yet commonplace urinary fever has come on and run the usual course. I am still studying the matter, as we all are, and I trust that sooner or later an infallible prophylactic may be discovered. I have believed that I possessed it several times in my life, but as many times have I been disappointed.

One of the most thorough contributions of recent date upon this subject, in a scientific way, that I am acquainted with is from the pen of Dr. Noël Hallé, in the *Annales des Maladies des Organes Genito-Urinaires* for February, 1892, which embodies the present status of conviction of Professor Guyon and his following, and the results of the laboratory investigations at the Hospital Necker, with the personal work of Hallé and Albarran, and citations of recent authorities.

It ascribes all forms of urinary fever,—*l'infection urinaire*, as they term it,—from the simplest rigor to the most pernicious deadly attack, to various but different bacterial infections.

It is needless to say that the subject is not yet cleared up, even by this painstaking study, and the practical side of prevention is hardly touched upon. By such studies light must eventually come, but the way is long and still dark; much mystery surrounds it.

I think I can hardly better illustrate the difficulties attending an attempt at generalization upon this intricate subject than by a detail of one case that illustrates enough well-known features of this peculiar malady to justify its brief reproduction:

A healthy gentleman, thirty-eight years old, with sound kidneys and clear urine, save an occasional urethral shred, consulted me in December, 1891. He had moderate obstructive urethral symptoms, with much suprapubic pain. A No. 19 French bougie found two moderate constrictions in the pendulous urethra at the usual sites, but would not pass the bulbo-membranous junction. Several smaller sizes were successively used, but no instrument engaged, so that the attempt to enter the bladder was given up for the day, as the patient's symptoms were not urgent and as no preparation against urinary fever had been made. There was a fair show of blood from the soft, deep stricture and a little subsequent hemorrhage, yet all the blood came from in front of the bulbo-membranous junction, beyond which nothing had penetrated. Without other precautions than a little alkaline drink, this patient went at once to his home in a neighboring city. He lost some blood and had considerable pain on urinating, but no chill whatever and no elevation of temperature, and his stream became larger and the suprapubic pains less.

This case illustrates what we so very often see,—*i.e.*, a lesion of the mucous membrane drawing blood, and some moderate distention of strictures anterior to the triangular ligament, yet no subsequent chill or general reaction, even when no precautions are taken.

This patient now took winter-green oil freely, continued his alkaline medicine, and filled himself up with quinine. His urine was perfectly clear. In this condition I passed a filiform soft bougie (No. 3 French), in my office, fairly into his bladder. It was slightly grasped on withdrawal, but brought no blood. Ten hours later, after reaching home, a few hours after his first urination, he had a violent chill and a temperature of 103° F., and within the next forty-eight hours he had five more severe chills, showers of uric-acid crystals and urates, scanty urine containing albumin and casts, and great physical and mental depression. Here surely was a good subject for investigation. I gave this patient salol and diuretin freely (30 grains shortly before the instruments were again used), and, having him warm in bed, I passed successively No. 3 and No. 6 French bougies, bringing a little blood. There was no chill and no reaction whatever, and this was not because he was warm in bed and kept there, as the subsequent history shows.

At the next sitting, under exactly the same conditions, I passed a No. 11 French soft bougie. It was very tight; some blood followed, but there was no chill. This was an increase of five sizes French.

At the next sitting I used the same precautions and raised four sizes,—to No. 15 French. There was a little more blood than before on the withdrawal of the instrument, but it was slight. All the precautions had been used, yet six chills followed; albumin reappeared, and considerable straining on urination, and evidences of posterior traumatic urethritis, so that three weeks were allowed to pass before another attempt at dilatation was made. Then a No. 15 French bougie was again passed, with all the previous precautions and an extra one.

I recalled Hartmann's statement, made in an article entitled "Fièvre Urineuse," which I had just read, to the effect that urinary chill was due to the forcible penetration, under a strong urinary effort, of morbid organisms, which were thus driven into the circulation through a newly-abraded surface; and I coupled this remembrance with a statement made before this Society by Palmer, of Louisville, that he prevented chill after deep internal urethrotomy by filling the bladder with hot bichloride solution, and letting the patient void it after the operation. So I gave the salol and diuretin, and, after washing the urethra, filled the bladder with a hot bichloride-of-mercury solution (1 to 3000). Then I passed the No. 15 French soft bougie, as before. Blood followed, as usual. The patient immediately evacuated, spontaneously, his bladderful of hot bichloride solution, and he had no chill and no reaction whatever. I repeated this several times until I reached No. 26 French,—the patient's full size, in my opinion,—and never a chill or any disturbance followed.

Was it, finally, the bichloride that did the work? I cannot tell, for I passed the full-sized instrument without using any precautions. I still brought blood, but no chill followed. My patient was at last acclimated to his bacteria, I suppose. Now he passes his instrument himself without drawing blood and with no chill.

I have used the bichloride many times since, alone and combined with other means, yet sometimes urinary chill follows. Therefore, I frankly say to-day that I know of no positively certain means of averting urinary chill in every case, but of those I rely on, I consider the combination of salol, diuretin, bichloride irrigation, and warmth in bed the best.

APPLICATION FOR HEMORRHOIDS.

PREISMANN gives the following for this purpose:

℞ Iodide of potassium, gr. xxx to lxxv;
Powdered iodine, gr. v;
Glycerin, ℥x.
Mix, and label "For external use."

The patient is to take a hot sitz-bath daily, and to apply to the hemorrhoids every three or four hours small tampons of absorbent cotton mixed with this glycerole. This diminishes the sensation of pain and burning.

Should inflammation become increased, a weaker solution may be employed, or in other cases the strength of it may be increased.

Preismann claims that this treatment will cure hemorrhoids in from two to three weeks.

THE USE OF MENTHOL IN PRURIGO.

COLOMBINI publishes forty-four cases of pruriginous dermatitis treated with menthol according to the method of Dubreuilth and Archambault. The cases may be divided into three classes:

1. Those in which an inflammation of the

skin, accompanied by an eruption, produces itching; as, for example, in eczema.

2. Those conditions of the skin in which the itching is the chief symptom, without any other visible symptoms; or, in other words, nervous pruritus.

3. And, finally, in those cases in which eruptions having appeared, and been scratched, the disease is produced by the friction which is applied.

For these cases the following prescription is given:

℞ Menthol, gr. lxxx to clx;
Alcohol, ℥iiiss.

Or,

℞ Menthol, gr. clx;
Oil of sweet almonds, ℥iiiss.

Or, again, an ointment consisting of—

℞ Oxide of zinc,
Powdered starch, of each, ℥viss;
Menthol, gr. vii to xlv;
Vaseline, ℥ii.

Or, finally,

℞ Oxide of zinc,
Subnitrate of bismuth, of each, ℥iii;
Menthol, gr. xv to xlv;
Powdered starch, ℥i.

The results which he obtained have been excellent in the first class, variable in the second class, and very good in the third class.—*L'Union Médicale.*

TREATMENT OF ECZEMA OF THE VULVA.

LUSCH is said by *L'Union Médicale* to recommend the following prescription in this condition:

℞ Tincture of opium,
Bicarbonate of sodium, of each, ℥ii;
Bicarbonate of potassium, ℥i;
Pure glycerin, ℥iss;
Distilled water, ℥viii.

Make a solution, and apply it hot morning and night to the diseased area. After each lotion powder the parts with the following:

℞ Finely-powdered starch, 49 parts;
Finely-powdered camphor, 1 part.

THE TREATMENT OF DIARRHŒA IN INFANTS.

According to the *Revue de Thérapeutique Medico-Chirurgicale* the following prescriptions are very useful under these circumstances:

℞ Phenol-water, ℥ii;
Subnitrate of bismuth, gr. xlv;
Lime-water, ℥iss;
Syrup of bitter orange, ℥ss.
One-half teaspoonful every two hours.

If the diarrhœa resists this treatment, the author recommends an infusion of colomba-root with bismuth, as follows:

Colomba, gr. vii to xv.
Make into an infusion with 2 ounces of water, and add subnitrate of bismuth, 45 grains; syrup of bitter orange, ½ ounce.
One-half to one teaspoonful of this every two hours.

AN OINTMENT FOR CHAPPED SKIN.

℞ Menthol, gr. vii;
Salol, gr. xx;
Olive oil, ℥ss;
Lanolin, ℥iss.
Make into a salve and apply to the affected part.

On the first application there will be some pain of the skin. After this the cracks in the skin will rapidly disappear, and may be prevented from returning by the regular use of this ointment twice a day.—*L'Union Médicale*, November 15, 1892.

AN OINTMENT FOR THE SKIN-SPOTS OF PREGNANCY.

℞ Pure oxide of zinc, gr. iv;
Yellow oxide of mercury, gr. xvi;
Castor oil,
Coca-butter, of each, ℥iiiss;
Essence of roses, gtt. x.
Make an ointment and apply, with friction, twice a day.

At night allow some of the ointment to remain on the parts affected.—*L'Union Médicale*, November 24, 1892.

AN ADHESIVE ANTISEPTIC OINTMENT.

L'Union Médicale for November 22, 1892, recommends the following:

℞ Oxide of zinc, gr. iv;
Chloride of zinc, gr. xx;
Gelatin, ℥vi;
Distilled water, ℥x.

This application, applied to any broken surface of the skin, is useful as a protective and antiseptic.

THE USE OF SPRAY IN DISEASES OF THE STOMACH.

DR. EINHORN, in the *New York Medical Journal*, contributes an article upon this subject, in which he points out that the ability of the spray to medicate large surfaces of mucous membrane in the air-passages caused him to think of its employment in the treatment of diseases of the stomach. The usual spray apparatus can be modified in such a way that, instead of the hard-rubber branch of the apparatus, the same branch is made of soft rubber and lengthened. In this way the gastric spray apparatus consists of the usual spray apparatus, in which there is a soft Nélaton tube, of seventy centimetres' length, inserted between the hard-rubber spray end (one centimetre in length) and the hard-rubber branch running to the bottle, within the Nélaton tubing. Another soft tube of thinner calibre connects the inner capillary tube with the nozzle.

As the spray is generated by the air forced by the bulb through the tube taking up the fluid and dividing it into fine particles, the medicaments will necessarily come in contact with every part touched by the air.

If the stomach is empty when spraying, the air that enters will expand the organ and transport the fluid to every part of its interior.

The administration of the spray in gastrotherapeusis may perhaps be a suitable form for fulfilling the following purposes:

1. To disinfect the mucous membrane of the stomach.

2. To exert an astringent effect.

3. To produce analgesia in gastralgia of local character (from ulcer, cicatrix, or cancer).

Method.—As it is only possible to spray the stomach in its empty state, it will be necessary to administer the spray either when fasting or after a previous lavage.

A preceding lavage will always be indicated if we intend to disinfect or apply astringents, for in these instances it is necessary first to remove the mucus with the micro-organisms embedded therein. In order to exert an analgesic influence, the lavage may perhaps be omitted.

After filling the apparatus with a sufficient amount of the required solution, the tube end is dipped into warm water and thereupon inserted into the stomach of the patient. It is best to begin with the spray as soon as the nozzle (being in the stomach) has a distance of about forty-five centimetres from the lips of the patient. Provided the nozzle is not covered by the stomach-wall, there can be heard during the spraying, at times in the neighborhood of the patient, otherwise by putting the ear on the gastric region, the sound characteristic of the spray. In case the opening is covered, the spray is generally unable to pass, and it then is necessary to insert the tube a little farther.

Even if the spray works well from the beginning, it will be expedient after a while to introduce the tube a little farther, in order to have the spray work from different points.

In several cases Dr. Einhorn made use of this method for therapeutic purposes, and asserts that the administration of the spray is easy and convenient.

A report of the results obtained will appear in a report later on, after gathering sufficient experience with this method of treatment.

THE ELIMINATION OF CREOSOTE.

Continuing the studies of other investigators upon the above subject, L. IMBERT (*Bulletin Général de Thérapeutique*) has found, after careful experimental observations, that creosote is chiefly eliminated by the urine, no matter how the drug is administered, whether subcutaneously, by the mouth, or by the rectum. The author has likewise established the fact that the largest quantity of creosote is eliminated during the first twelve hours. While the elimination by the kidneys is very rapid, that by the lungs is comparatively insignificant. Of the three chief elements of creosote,—cresol, guaiacol, and phlorol,—the guaiacol appears to be the most rapidly eliminated.

TREATMENT OF ERYSIPELAS.

DR. J. A. GLÄSER (*Therapeutische Monatshefte*) reports one hundred and forty-eight cases of erysipelas, in part from his private practice, and in part from cases observed in the hospital. These did not include any but his severe cases, and were scattered through fifteen or sixteen years. The patients varied in age from three-fourths of a year to seventy-five years. The largest part of them were between twenty and forty years old. There were fifty-one women and ninety-seven men. The mortality was eleven per cent. for the one hundred and forty-eight cases; but, leaving out the complicated cases, his mortality was only 4.4 per cent. He thinks it very untrustworthy to try to lay down exact figures as to the duration of the disease and its different symptoms and phases. So much depends upon the age, sex, constitution, etc., of the patient, which any attempt to describe accurately would be

futile. Gläser relied for treatment on diet, purging, and lead-water bandages, with rest in bed and nursing. He tried the treatment recommended by Volckmann, of painting with ten- to twelve-per-cent. nitrate of silver solution in one case, but the result was a frightfully sore back for the patient, which lasted until after the erysipelas had wearied of its wanderings. He followed directions closely, but may have happened on a patient with a specially tender skin. At any rate, he was not tempted to use that treatment again. The treatment of Kraske-Riedel he has never tried, but he finds it both cruel and of no avail. They make numerous incisions in the skin bordering on the disease, and then apply corrosive-sublimate solution or a five-per-cent. carbolic solution. Gläser thinks these solutions could be effectually applied without making the incisions, although he does not approve of that. He says some one recommended bandages with a watery carbolic solution for rheumatic polyarthritis. He made trial of this, but found absolutely no improvement in the polyarthritis, and a change in the color of the urine, such as is characteristic of carbolic-acid poisoning, occurred. He thinks if this could occur when the skin was unbroken, the danger is far greater under other circumstances. He also tried the application of carbolic acid for erysipelas, but here, too, the result was absolutively negative.

ANTISEPTIC TREATMENT OF PULMONARY TUBERCULOSIS BY INHALATIONS OF IODOFORMATED OR IODOLATED ESSENCE OF TURPENTINE.

DELTHIL (*Journal de Médecine de Paris*), who has studied the antiseptic treatment of tuberculosis carefully, recommends the iodoformated or iodolated essence of turpentine as an excellent remedial combination, administered in the form of inhalations, in the disorder mentioned. The inhalations are said to be well borne by patients, and are given in *séances*, each of from ten to fifteen minutes' duration, occupying in all about four hours every day. The following mixtures may be used:

℞ Essence of turpentine, 350 grammes;
Essence of spikenard, 100 grammes;
Iodoform, 8 or 10 grammes;
Sulphuric ether, 20 grammes. M.

℞ Essence of turpentine, 350 grammes;
Essence of spikenard, 100 grammes;
Iodol, 8 or 10 grammes;
Sulphuric ether, 20 grammes. M.

Either mixture is placed in a flask of one litre capacity, connected with the corresponding inhaling-tube. The combination must be renewed every ten days. The inhalation-flask must be placed in a water-bath at a temperature of 30° C. In order to enhance the evolution of iodine, one gramme of iodoform or iodol may be added to the mixture every two days. After each inhalation all the orifices of the apparatus must be well closed. On the whole, the effects of these medications are decided, the author drawing the following conclusions:

1. To obtain a direct, local pulmonary asepsis, a non-toxic, antiseptic gaseous interchange is indicated.

2. The iodoformated or iodolated volatile oils of turpentine answer such indications.

3. Their absorption is proven by the fact that the substances are found in the urine after the inhalations.

4. Under the influence of this medication, the secretion and the cough are diminished, the appetite is increased, the morbid processes are stayed, and often a wonderful change is produced.

5. This is not an exclusive treatment, but permits the employment of the alimentary, medicinal, and hygienic measures recommended in the disease under consideration.

THE TREATMENT OF ARTERIAL CARDIOPATHIES.

An exhaustive study of this subject has been made by HENRI HUCHARD (*Bulletin Général de Thérapeutique*. The author divides arterial cardiopathies into three periods,—*1, the arterial period; 2, the cardio-arterial period; 3, the mitro-arterial period.* A special treatment is advocated for each one of these periods.

1. TREATMENT OF THE FIRST PERIOD.

a. Hygienic and Dietetic Treatment.—Preference should be given to alimentation composed largely of milk in all forms, vegetables, a few eggs, and later, of fresh and well-cooked meats. When the vascular plenitude is marked, there may be an indication for a lighter regimen. Feeding must, therefore, be subject to certain rules, particularly in regard to those predisposed to arterio-sclerosis or to heart-disease of an arterial origin; and it would be well, in this connection, to bear in mind this maxim: *Modicus cibi, medicus cibi.* The function of the skin should be aided by repeated cold bathing, and especially by the application

of massage or invigorating frictions, practised regularly every morning. In this way the circulation of the blood is made more active, both centrally and peripherally.

b. Trinitrine.—At this period of the disease, nitro-glycerin, or commonly called trinitrine, is prescribed, with the object of influencing the arterial tension by the depressant and vaso-dilator action of the drug. This medicament also diminishes the peripheral resistance, and increases, at the same time, the energy of the heart. The action of the remedy on the kidneys (interstitial nephritis existing almost always in arterial cardiopathies) is also marked, and the effects produced excellent. The drug should be prescribed, night and morning, for a period of from ten to fifteen days every month, in doses of from 2 to 4 drops of a solution of the strength of one per cent. This quantity may be progressively increased, according to the susceptibilities of the individual case, to 12 and even 20 drops a day, in divided doses.

2. TREATMENT OF THE SECOND PERIOD.

c. Trinitrine and the Nitrites.—Trinitrine itself is insufficient at this period of the malady, and therefore the nitrites are combined with it, especially those of sodium and potassium. The action and elimination of the nitrite of amyl are too rapid to do much good, although the promptness with which the remedy produces its effects is highly valuable in anginous attacks.

d. Iodated Medication.—The author recommends this medication on account of the depressant influence exercised by it on the circulatory apparatus. The two salts used are the potassium and the sodium iodides, preferring the latter, because,—1, the potassium salt administered for a long time is a poison to the heart; 2, the cardio-arterial affections predispose to renal insufficiency and impermeability, and the slow and progressive accumulation of the salts of potassium in the economy constitutes a danger *per se;* 3, the iodide of sodium is better borne by the stomach, and is less prone to produce symptoms of iodism, but without avoiding them altogether. The potassium salt is used more largely, perhaps, in syphilitic subjects. These iodides may be substituted by those of strontium, and in cases where the digestive troubles are marked, calcium iodide should be preferred, in doses of from 1 to 2 grammes. During the first portion of this period iodide of sodium is prescribed, in doses of from 10 to 30 centigrammes in the course of twenty-four hours, best administered in milk, during twenty days every month, for at least a year. During the ten days of the monthly suspension of the iodated medication, 2 or 3 drops of the one-per-cent. solution of trinitrine are given night and morning. There should be no fear of increasing the dose of the iodides to 1, 2, and even 3 grammes, provided the localization of the arterio-sclerosis on the heart has not occurred. At the end of the second period the myocardium becomes feeble, and there is then a tendency to visceral congestions and peripheral œdemas. Under such circumstances the author prescribes, besides the iodated medication, a heart-tonic, such as the *sulphate of sparteine* or *caffeine*. The following is recommended:

℞ Distilled water, 100 grammes;
Iodide of sodium, 5 grammes (or 10);
Sulphate of sparteine, .50 gramme (or 1). M.
Sig.—A dessertspoonful twice or thrice a day.

3. TREATMENT OF THE THIRD PERIOD.

1. *Employment of Digitalis.*—*a. Contra-indications.*—The drug should not be employed in cases exhibiting evidences of subacute aortitis with attacks of angina pectoris. Interstitial nephritis, atheroma of the arteries, and sclerotic lesions of the valves are also contra-indications for the use of digitalis.

b. Indications.—Hyposystolic manifestations, such as a slight pretibial œdema, fatigue, or insufficiency of the myocardium, as shown in the appearance of a rapid blowing sound, the production of œdematous congestions, etc., are all indications for the use of the drug under consideration. In arterial cardiopathies, when the arterial tension and the rapidity of the heart become irregular, showing the existence of pretibial œdema, digitalis, in such conditions, is always prescribed by the writer, as in these cases the effects produced by the drug are more marked than those caused in simple valvular lesions. The author insists,—1, that digitalis, even when administered in large amounts, is not dangerous in renal complications; 2, that the drug is useful, and often diminishes the amount of albumin, in not only cardiac albuminurias, but also in parenchymatous nephritis. The remedy is of no service in hepatic congestion or sclerosis, and is contraindicated in hypersystolic conditions, as well as in the last stages of asystolia and in degeneration of the myocardium.

c. Dose and Modes of Administration.—The writer prefers crystallized digitalin in solutions of 1 to 1000, and believes that this is a reliable preparation and well borne by patients. He prescribes at once in a single day 30, 40, and even 50 drops of the solution referred to, the

last quantity representing one milligramme of the crystallized digitalin or about four milligrammes of the amorphous body. The author recommends Petit's solution, which is made as follows:

℞ Crystallized digitalin, 1 gramme;
Pure glycerin (sp. gr. 1250) 333 cubic centimetres;
Distilled water, 147 cubic centimetres;
Alcohol at 95° F., q.s. to make 1 litre at 15° C.

The digitalin is dissolved in 450 cubic centimetres of alcohol; the water and the glycerin is then added, and the litre is completed by alcohol.

This solution is advantageous, since fifty drops of it correspond to one gramme or one cubic centimetre. The arrival of the hyposystolic period, characterized by a slight pretibial œdema, is the signal for the beginning of the *systematic* administration of digitalis. This must be given every three weeks, during one day only, and in a single dose of 30 drops. By this method the cardiac fibre may be sustained for months and even years. To this treatment an absolute milk diet must be conjoined. If a patient presents a hyposystolic condition, or one of asystolia, the drug is not given immediately; the patient is first placed for a few days at absolute rest and under a milk diet. These two simple methods produce a certain amount of diuresis. After a few days a purge is administered, and on the following morning, for one day only and in a single dose, 40 or 50 drops of the one-per-thousand solution are ordered. Fifteen or twenty days later the same thing is repeated if the indication persists.

2. *Milk Diet and the Treatment of Cardiac Dyspnœa.—a. Alimentary Regimen and Milk Diet.*—If the dyspnœa is of alimentary origin, diet should be carefully guarded. All foodstuffs charged with toxines, such as soups and fatty substances, salty articles, preserves, pork, cheese, fish, game improperly cooked, etc., should be particularly avoided. Cold milk that has been well boiled should be preferred. A quantity of 300 grammes should be ingested slowly every two hours. If it is badly borne by the stomach, it may be mixed with a dessertspoonful of lime-water properly prepared, or with 1 gramme of bicarbonate of sodium. To avoid intestinal fermentation, to every cupful of milk 5 or 6 cachets of the following mixture may be added:

℞ Benzonaphthol, 20 grammes;
Pancreatin, 10 grammes.
Mix, and make 40 cachets.

The benzonaphthol may be substituted by the salicylate of bismuth, or the cachets in the milk may be substituted by 50 centigrammes of the subnitrate of bismuth. These medicaments may correct any diarrhœa present. If constipation exists, a dessertspoonful of magnesia, or cachets of from 50 centigrammes to 1 gramme of the powder of rhubarb, or, better still, 50 centigrammes each of the flowers of sulphur and magnesia, given every morning, should suffice. Aromatics may be used when patients have aversion for milk. The author employs with success, in such cases, the following mixture:

℞ Fluid extract of coca, 120 grammes;
Fluid extract of kola nut, 80 grammes. M.
Sig.—A tablespoonful twice or thrice a day in milk or in Curaçao liquor.

This method may last from ten to fifteen days, or longer, if the dyspnœa is not relieved. When this has disappeared, the milk regimen should be diminished to from 1 to 2 litres per day of the lacteal fluid, to which may be added a few eggs and vegetables. If the dyspnœa should return, the patient is to be subjected again to the exclusive milk diet. Milk, on the whole, increases the energy of the heart, because it diminishes the work of that organ. Intestinal antisepsis may be brought about by the use of naphthol, in doses of from 1 to 2 grammes, or, better still, by benzonaphthol, in amounts of from 1 to 4 grammes per day. The author condemns, in these cases, the employment of salicylate of bismuth, betol, and salol, since the salicylic acid of these medicaments may produce irritation and congestion of the kidneys. In rebellious cases of dyspnœa, inhalations of oxygen and nitrite of amyl are of service, these latter being superior to those of iodide of ethyl and pyridin, and especially indicated in anginous accesses.

b. Treatment of Nervo-Reflex Dyspnœa.—In the nervo-reflex forms of dyspnœa, bromide of potassium, in doses of 4, 5, and even 8 grammes per day, is the best remedy.

c. Treatment of Cardio-Plegic Dyspnœa.—In cardio-plegic dyspnœa, due to dilatation of the cardiac cavities, there is nothing better than the application of general bloodletting.

d. Treatment of Mechanical or Cardio-Pulmonary Dyspnœa.—If the condition is mechanical and of cardio-pulmonary origin, digitalis is still serviceable.

e. Treatment of the Dyspnœa of Acute Pulmonary Œdema.—If the condition is due to acute œdema of the lung, better than digitalis are the injections of caffeine and those of strychnine, in doses of from 2 to 3 milligrammes a day. Finally, in these cases, electrical stimulation of the vagus nerve is apt to

produce excellent results, and similarly the application of acupuncture, vesication over the cardio-aortic region, and dry cupping. Atropine is of no practical value, and the same may be said of muscarine.

3. *The Employment of Revulsives.*—*Cutaneous revulsives* are to be employed only when there is a tendency to syncope. Their action, according to Besson, is summed up as follows: 1. Intense and rapid cutaneous excitations may produce slowing of the heart, preceded by a slight acceleration, marked increase in the force of the pulse, and a notable lowering of the arterial, accompanied with an increase of the venous, pressure. 2. Feeble excitations cause an acceleration of the heart and an increase of the arterial pressure. 3. Slow and permanent excitation (as blistering, for instance) produces anæmia of the adjacent parts and diminution of the pain. If the palpitations are distressing, cold-water applications are serviceable, or sprays of ether or chloride of methyl. The refrigeration of the præcordial region is especially indicated during the hypersystolic period. A milk diet and the ingestion of digitalis are to be continued. The following formula is recommended at this time:

℞ Tincture of digitalis,
Tincture of squill,
Tincture of aconite root, of each, 5 grammes. M.
Sig.—10 drops three or four times a day for a period of eight or ten days.

Muscular work and plethoric conditions must also be reduced by enhancing diuresis and diaphoresis, particularly in non-compensatory valvular affections and in those of the myocardium. In such cases a milk diet, frictions, massage, and passive movements are indicated, and the employment of the iodides as vasodilator medicaments. This method should be combined with cold affusions, local or general, and stimulating frictions to excite capillary action.

The author concludes his able article by speaking of the hydromineral and climatic treatment. With regard to the first, he recommends sulphur, bicarbonated, iodobromated, and sodo-chlorated waters. Springs having an elevation of five hundred or six hundred metres should be avoided, since at this height they are dangerous, the diminution of the atmospheric pressure tending to produce congestion and hemorrhage. The waters do good on account of their resolvent, diuretic, laxative, thermal, and revulsant effects; they similarly influence the peripheral and central circulation. Climate is of some importance, and, above all, high altitudes should be avoided. Places not subject to sudden changes of temperature should be preferred. High altitudes, however, are not contraindicated in those cases in which the cardiopathies are the result of disturbances of digestion, of an anæmia or neurasthenia. The sea-side is to be advised with caution, as in certain cardiopathies the climate of such regions tends to produce an unfavorable excitability of the circulation.

THE TREATMENT OF DIPHTHERITIC ANGINA BY CHROMIC ACID.

In the treatment of diphtheritic angina, the two chief medicaments, according to LESCURE (*Bulletin Général de Thérapeutique*), are,—

1. To destroy the false membranes, so as to stop the false development of toxines.

2. To combat the effects produced in the economy by the introduction of said toxines into the circulation.

To meet the first indication the local application of chromic acid is to be made by means of a camel's-hair brush, using the following solution:

℞ Chromic acid, 2 grammes;
Distilled water, 5 grammes.

Care should be taken to remove any excess of the acid. These applications are to be followed by those of tannic acid, made also with a camel's-hair brush, using this combination:

℞ Tannic acid, 6 grammes;
Glycerin, 30 grammes.

Internally the following formulæ are recommended:

℞ Tincture of eucalyptus, 3 to 10 grammes;
Mucilage of acacia, 90 grammes;
Syrup of orange, 30 grammes. M.
Sig.—To be taken in tablespoonful doses in the course of the twenty-four hours.

℞ Tincture nux vomica, 10 grammes;
Extract of cinchona, 5 grammes;
Malaga wine, 200 grammes;
Syrup of orange, 100 grammes. M.
Sig.—Three dessertspoonfuls per day.

The tincture of nux vomica is to be regulated so as to administer from 3 to 8 drops in the twenty-four hours, according to the age of the patient. The two mixtures are given from the first day of the disorder. Under this treatment, the basis of which is the local application of chromic acid, Lescure has obtained the best results. The author has so far observed

fifty-four cases of diphtheritic angina, all of which have been treated exclusively by the method indicated, with entire success.

PREPARATION OF GLYCERIN SUPPOSITORIES.

PROFESSOR J. P. REMINGTON, in the *American Journal of Pharmacy*, gives the following directions as to the preparation of glycerin suppositories:

The problem which has confronted the pharmacist has been to combine a comparatively large quantity of glycerin with an inert body, capable of giving the requisite solidity to the mass, and at the same time to be soft enough to liquefy in the rectum. Very many formulas have been in existence, but in the writer's opinion none give as much satisfaction as the following:

Sodium carbonate, gr. xl;
Stearic acid, gr. lxxx;
Glycerin, ℥ii ʒii.

Dissolve the sodium carbonate in the glycerin, add the stearic acid, heat carefully (preferably by the use of a water-bath) until effervescence ceases; the solution is then poured into a suppository mould to make twelve suppositories. There is no necessity for cooling the moulds with ice, although there is no objection to this in warm weather. As each suppository contains about ninety per cent. of glycerin, they must be protected from the action of moist air, which has a tendency to liquefy them. Several expedients are resorted to. Each one may be wrapped in tin-foil, or quickly dipped in melted paraffin, or each one inclosed in a small glass vial without a shoulder, and made for the purpose of holding one suppository.

IODOFORM INJECTIONS IN THE TREATMENT OF TUBERCULOSIS OF JOINTS.

In reference to iodoform injections in tuberculosis of joints, the *New York Medical Journal* of August 27 quotes Dr. Curtis as saying that "he has found the injection beneficial in some cases, and in others he has seen no benefit from such injections."

The reports which may be read in the various medical journals concerning this common operation and the results that follow are far from uniform, and many are decidedly unfavorable.

Little has been said about any particular method of using the iodoform for injection, or the treatment which should follow its use, conditions that are necessary for the success of any operation.

DR. DARLING (*New York Medical Journal*, lvi., No. 18) reports a few completed cases from Professor Nancrede's clinic at Michigan University Hospital, to illustrate the value of the method adopted by him, and to show the uniform success which has followed the operation.

The emulsion used is composed of ten per cent. iodoform in a mixture of equal parts of water and glycerin. This mixture is boiled half an hour to thoroughly sterilize, and a fresh supply is prepared for every injection. That part over the joint selected for injection is carefully washed and covered with an antiseptic pad as in all important operations.

A small trocar is used, to which can be readily attached the syringe containing the emulsion. These instruments are carefully sterilized, and all air is driven from the syringe at the time of filling.

The joint should be carefully punctured at any safe point, and all fluid evacuated by gentle pressure. A recently-sterilized three-per-cent. solution of boric acid is then used to wash out the cavity. This may be repeated until the fluid returns clear.

The syringe is then attached to the canula, and one to three drachms of the emulsion is slowly injected. The iodoform is diffused about the cavity by kneading and manipulating the parts. The canula is withdrawn and the puncture carefully sealed with collodion and cotton.

The joint may then be fixed by a splint, and rest maintained for several days or until the time for the next injection.

The second injection may be made in one to three weeks, according to the extent of disease present, the amount of the drug employed, and the results following the injection, for success depends upon the continuous action of the iodoform; so that with a small absorbing surface but little is required, while a larger surface needs a greater amount.

These injections are frequently made without the use of an anæsthetic, and after two or three hours the patient does not complain of pain, unless a large amount has been injected.

CASE I.—L. C., female, aged six years. Two members of her mother's family had died of tuberculosis. While playing with some school-mates in September, 1890, she received a slight injury to the left ankle. No attention was given to it at the time, but three days later it began to swell. She continued to use it until the following February, when she had to begin the use of crutches on account of pain.

About April 1, 1891, a plaster-of-Paris band-

age was applied, by which rest was maintained for four weeks with no good results.

Examination of joint showed that it was partially disorganized, freely movable, with some crepitus, tenderness, and a great amount of swelling.

On June 19, 1891, the first injection of the iodoform emulsion was used, a second injection was made July 29, and a third on December 3.

The fourth and last injection was made March 3, 1892; four weeks later she began to use the ankle. She now walks, and is apparently cured.

CASE II.—C. R., male, aged ten years; mother living; father died of tuberculosis. Three years ago the patient fell into a post-hole, sustaining so slight an injury that no attention was given to it at the time. A few days later the right wrist became swollen and painful; the hand was partially disabled, and since last August has been entirely useless. There is much swelling on the dorsal surface, and the least movement causes intense pain. One year after the fall the left leg began to give trouble near the hip-joint, and a large abscess soon developed near the surface. This has been recently opened, and discharges freely. Examination of granulation tissue from its walls confirmed the diagnosis of tuberculosis. On the 10th of March the wrist-joint was injected and put at rest. Little pain was experienced; the swelling soon diminished and there was marked improvement. Four weeks later a second injection was made, and the parts were kept at rest for ten days; the splint was then removed, movement was permitted, and a few weeks later, when the patient left the hospital, he had a very useful wrist, quite freely movable and free from pain.

CASE III.—C. S., a female, aged six years; admitted to hospital January 18. Mother living; father died of consumption. The child has never been strong, often complaining of pain in the chest. Three years ago the child slipped on an icy sidewalk and fell; shortly afterwards began to complain of pain in right knee. About a year ago she began to have pain in right hip-joint and swelling of the entire limb. Has not been able to use the limb for four months. Does not sleep well unless under the influence of anodynes, is very feeble, and much emaciated. Diagnosis: tuberculous disease of hip-joint. Extension was immediately applied, and on February 18 the hip-joint was injected with iodoform emulsion.

Prior to this time an abscess had formed in the tissues on the outer side of the thigh. On February 24, after evacuating all tubercular detritus and washing out with sterilized boric-acid solution, the cavity was injected, but the disease had so far advanced that after an injection some weeks later it had to be opened, but the comparatively prompt healing showed that all tubercular tissue had been destroyed. On March 28 the Thomas splint was applied and the patient put on crutches. At the present time she is walking about the ward without the splint, slightly supported by one crutch, free from pain, and the diseased joint apparently cured. It is not necessary to say that her general condition is greatly improved.

CASE IV.—Mr. C. C., student, aged nineteen years; entered hospital December 16, 1891. Parents living, but father has had repeated hemorrhages from lungs. When nine years old his knee began to swell; was treated that time by the actual cautery, and apparently recovered. About a year ago, on account of exposure to cold, the parts began to swell again. He did not suffer much pain, but the muscles of the leg began to waste away and the knee became flexed. On December 17 the leg was straightened; the knee-joint was injected with the usual preparation of iodoform and put in a plaster cast. On January 9 he was discharged much improved.

The success of these operations probably rests upon the aseptic method of performing them, maintaining complete rest of the joint, and not using the second injection until the first had done its work. We must not forget that tuberculous lesions are slow in recovering, and those of joints prove no exception to the rule.

BICHROMATE OF POTASSIUM AS AN EXPECTORANT.

In the *Brooklyn Medical Journal*, DR. J. H. HUNT contributes an article upon the treatment of bronchitis and other conditions in which expectorants are needed, by the administration of bichromate of potassium. He recalls the fact that seventeen years ago Dr. Hutchins recommended to him the employment of one grain of bichromate of potassium triturated with nine grains of sugar of milk and mixed with twenty teaspoonfuls of water, as a remedy for severe suffocative bronchitis occurring in young children. So extraordinary were the results produced that Dr. Hunt has constantly employed the drug since 1875. He states that the only article of importance which he has been able to find concerning it was one of Dr. Drysdale, of Cannes, France.

Dr. Drysdale believes that the bichromate of potassium has a specific action or elective affin-

ity for certain organs and tissues, and that its action is most marked on the mucous membranes of the respiratory passages, nose, eyes, and mouth, and on that of the stomach and intestines; on the skin, liver, and kidneys, the fibrous tissues, periosteum and bone.

Hunt's experience with the drug has been confined to diseases of the respiratory mucous tract. According to this author, it is best administered in a freshly-prepared solution. The physician may readily carry it in the form of a triturate, which is readily dissolved in water at the bedside; or tablet triturates containing $\frac{1}{60}$ of a grain may be used. These triturates contain the minimum dose for a child one year old. Hunt claims that the bichromate of potassium is readily borne by the youngest infant, but that it should not be given within a few minutes of feeding with milk. To a child one year old he gives as much as $\frac{1}{20}$ of a grain to the dose, if oppression and suffocation are impending, and then diminished at one-hour intervals. Drysdale says that no more than $\frac{1}{4}$ grain should be given per day, but Hunt claims to have exceeded that amount without bad effects, instructing the attendants to diminish the dose if it acts like an emetic, but not to diminish the frequency of its administration. When it is rejected by the stomach it is without nausea or after-irritating effect. Dr. Hunt gives 10 grains of the powdered triturate, or a corresponding number of $\frac{1}{60}$-grain tablets, to be dissolved in twenty spoonfuls of water, with the best effect. This is probably due to the minute subdivision of the drug through trituration.

Not only in bronchitis, but also in coryza or influenza, or when the child "catches cold," is the bichromate of potassium to be given.

THE ACTIONS OF CAFFEINE AND OF THE PRODUCT OF DISTILLATION OF COFFEE.

To elucidate the action of caffeine on nutritive changes, KEERLEIN (*Revue de Thérapeutique Générale et Thermale; Pflüger's Archiv*, t. lxi. p. 165) has instituted a series of experiments, using the apparatus devised by Geppert. The apparatus consists essentially of a chamber to receive the air, connected with a canula furnished with a valve. The animal (a rabbit, for instance), upon which tracheotomy has been performed, is made to breathe into the chamber. The expired air, having been deprived of the carbon dioxide, is returned into the chamber by means of a second canula. By this ingenious method, the chamber, after each respiratory movement, receives a quantity of oxygen equal to the difference between the quantity of this gas contained in the inspired air and that contained in the expired air. This difference, in one word, represents the total quantity of oxygen consumed by the animal. It was found that caffeine, in doses sufficiently small as not to produce any spasmodic symptoms, increased the amount of oxygen consumed in the proportion of sixteen, seventeen, and nineteen per cent. On the contrary, the product of distillation of coffee, which is especially charged with caffeol ($C_8H_{12}O_2$), exercises no influence whatever in regard to the consumption of oxygen. Therefore, to judge from the results of these experiments, caffeine and coffee are not economical substances; but that, on the contrary, they are stimulants to nutrition, and the effects which they produce are undoubtedly the result of a direct action on the nervous system.

THE ACTION OF QUININE, ATROPINE, PILOCARPINE, ANTIPYRIN, AND ANTIFEBRIN ON THE ELIMINATION OF URIC ACID BY THE URINE, AND ON THE NUMBER OF LEUCOCYTES IN THE BLOOD.

In an able research, J. HORBACZEWSKI (*Revue de Thérapeutique Générale et Thermale*, September 20, 1892; *Sitzungsberichte der K. K. Wiener Akademie der Wissenschaften*, t. c., sect. 3, p. 101) appears to have demonstrated the relation that exists between the number of leucocytes in the blood and the quantity of uric acid eliminated under the influence of alimentation. When, under the influence of food, the leucocytes increase in number in the blood, there is, at the same time, an increase in the elimination of uric acid. Under certain circumstances, the leucocytes give rise to the formation of uric acid; and, on the other hand, this is also dependent on the disorganization of the leucocytes, which undoubtedly takes place in the organism, especially in the case of mammals. In other words, the chemical substances which act upon the leucocytes influence the production of uric acid, and inversely. It has long been established, particularly by the researches of Ranke, Kerner, Prior, Kumagawa, and others, that quinine diminishes the elimination of uric acid; and, according to Binz, the drug similarly decreases the number of leucocytes in the blood. This has been confirmed by recent researches.

Atropine, in daily doses of 1 milligramme,

has, in three cases, produced the same effects as quinine,—that is, a lessening in the number of white cells in the blood and in the amount of uric acid eliminated by the kidneys.

With the hydrochlorate of pilocarpine the results have been different,—that is, there is an increase in the number of leucocytes and a correlative increase in the quantity of uric acid. The dose of the drug administered by the mouth was 1 centigramme in each of the three cases observed, and of 1½ centigrammes in the fourth instance. In other experiments performed on the lower animals, the pilocarpine given hypodermically, in doses of from ½ to 3 centigrammes per kilo of the body-weight, only produced an increase in the size of the spleen. This result is the more remarkable, since the drug is an excitant of the contractile elements of the muscular fibre; it has a similar action on the walls of the intestine, causing a constant diarrhœa. The author calls attention to the contrast existing between the effects produced by quinine and those caused by pilocarpine. Quinine, without influencing the contractile elements at all, diminishes the volume of the spleen; while pilocarpine, acting on these contractile elements, produces an increase in the size of the same organ. The observer believes that these changes in the spleen, caused by the two medicaments, occur independent of any action exercised by the drugs on the contractile elements of the organ.

Antipyrin, in doses of 2 grammes, and antifebrin, in amounts of .5 gramme, produce what may be called opposing results,—that is, a diminution in the quantity of uric acid eliminated by the urine, and an increase in the number of leucocytes in the blood. The author affirms, therefore, that the actions of antipyrin and antifebrin, on the one hand, and the effects of quinine, on the other, are not identical, or at least cannot be considered as such.

Kumagawa has observed an increase in the elimination of uric acid under the influence of large doses of antipyrin, and an increase in the elimination of nitrogenous principles under the action of large doses of antifebrin. These two drugs, according to the author, influence nutritive changes differently from quinine. For example, under the action of antipyrin there occur no atrophic changes in the spleen, as it happens in the case of quinine. Finally, the influence exercised by the latter drug on the production of leucocytes differs from that of antipyrin and antifebrin, which, in large doses, increase the number of said leucocytes in the blood.

THE ACTION OF ALCOHOL ON THE CIRCULATION.

The evidence that we have regarding the influence that alcohol exercises on the blood-pressure is mainly contradictory. GUTNIKOW (*Revue de Thérapeutique Générale et Thermale*, September 20, 1892; *Zeitschrift für Klin. Med.*, t. xxi., fasc. i. and ii. p. 153, 1892) has endeavored to clear up the subject by conducting a series of experiments upon curarized dogs. To these animals, under such conditions, alcohol was administered by the mouth in ascending doses. From the results obtained the author has drawn the following conclusions: 1. Alcohol produces a diminution of the arterial pressure, due to a depression of the vasomotor centres. 2. Alcohol enhances the work of the heart. 3. Alcohol does not influence the pneumogastric nerve.

CITRIC ACID AS A MEANS OF STERILIZING WATER DURING EPIDEMICS OF CHOLERA.

According to J. DE CHRISTMAS (*La Médecine Moderne*), a weak watery solution of citric acid is a sure means of depriving water of cholera germs. The author made a series of experiments with cultures of cholera. A few drops of a watery solution of said cultures were placed by means of sterilized pipette in a watery solution of citric acid, of various strength, and well mixed. After fifteen minutes, a drop of this mixture was placed in beef bouillon, slightly alkaline, and the tubes put in the incubator at a temperature of 32° C. An examination made in from twenty-four to forty-eight hours revealed the fact that a solution of citric acid of the strength of 4 in 10,000 was sufficient to suppress the development of the cultures, a solution of 6 in 10,000 almost destroyed them, while a solution of 8 in 10,000 always kills them. Control experiments showed that a feeble quantity of citric acid mixed with bouillon exercised no influence in the development of the cultures. Pieces of linen dipped in solutions of cholera cultures became sterilized, in about fifteen minutes, in a solution of citric acid of the strength of 8 in 10,000. From these results the author concludes that citric acid may be of great service in times of cholera to sterilize all the water used. Every twenty-four hours a solution should be prepared in porcelain vessels, holding each from ten to twelve litres of water. To the water of one of these vessels ten grammes of citric acid are added, and stirred until the whole is well dissolved. This solution has a slight acid taste, and may be

used as such, or mixed with wine, syrup, etc., for drinking and other purposes. The solution is well borne even by children a year old. It does not cause diarrhœa, nor has it any deleterious influence on the teeth. The author has never observed any bad effects produced from its use, and highly recommends it to be employed especially in localities where cholera appears to be endemic.

THE THERAPEUTIC USES OF ASAPROL.

SACKLER (*La France Médicale*) has made an interesting series of observations regarding the therapeutic applications of asaprol. He details numerous cases of various disorders in which the drug produced satisfactory results. In the first place, he found the new remedy most valuable as an antithermic and intestinal antiseptic. In typhoid fever it diminished the temperature and allayed the cerebral symptoms. In influenza it worked with good effect and promptly, after quinine and antipyrin had failed. In three cases of pneumonia, accompanied with high fever and delirium, asaprol effected a rapid cure. Several cases of acute tonsillitis in adults and children rapidly yielded to the action of the remedy. It was also of service in the treatment of boils, and in that of infectious diseases accompanied with albuminuria, and in which the albumin disappeared from the urine in a short time. As an analgesic, it was found successful in sciatica, intercostal neuralgia, tic douloureux, in the pains of muscular rheumatism, and even in those occurring in the lower extremities of alcoholic drinkers. In three cases of asthma, the new agent relieved two and produced a rapid cure in the third. Asaprol was found particularly useful in the treatment of acute articular rheumatism, acute polyarticular rheumatism, and subacute polyarticular rheumatism. One case of the polyarticular character of the disease, occurring in a young servant girl, seventeen years of age, was cured in twenty-four hours. Another case of the same nature, occurring in a man aged thirty-two, was cured in four days. The drug was in these instances as valuable as the salicylate of sodium. The author refers to fourteen other cases in which the drug produced the same happy results. Seventeen cases of the subacute disorder yielded completely in from three to four days. The author, finally, affirms that in the majority of cases of acute and subacute articular rheumatism, asaprol is an excellent remedy, and is well borne, even by patients suffering from disorders of digestion, and who were unable to take antipyrin or the sodium salicylate. In only two cases did the drug produce slight nausea. In the majority of instances it is better to begin with doses of from 2 to 4 grammes, which may be increased according to the requirements of the individual case. Asaprol never produced cerebral symptoms, vomiting, or other untoward effects. It was administered with success in patients suffering at the same time with vomiting and diarrhœa. The remedy frequently caused an increase in the amount of urine voided in the twenty-four hours. In many cases of rebellious chronic rheumatism, or of rheumatism accompanied with successive subacute attacks, asaprol did good, and, when suspended, patients asked for the remedy. In such instances, although it produced no cures, the remedy calmed the pains, and thus relieved suffering. The observations of the author, which number sixty, have been confirmed by Dujardin-Beaumetz. Stackler prescribes asaprol in cachets of from .5 to 1 gramme each, or in solution of the strength of five per cent. It may, in this way, be administered in beer, coffee, anise-water, etc. Solutions of the strength of from two to five per cent. may be employed for gargles, vaginal, urethral, and rectal injections. Ointments of the strength of 1 in 3 are also used. Asaprol is incompatible with the salts that precipitate lime, the soluble sulphates, bicarbonate of sodium, and iodide of potassium.

THE DIETETIC MANAGEMENT OF PULMONARY TUBERCULOSIS.

In a recent number of the *Medical News*, DR. E. F. WELLS, of Chicago, contributed an article upon the dietetic management of pulmonary tuberculosis, and pointed out the necessity of keeping up the strength by proper food, in view of the marked wasting which always accompanies this disease.

He recommended that bulky articles of diet which have but little nutritive value, requiring at the same time great digestive power, should be absolutely forbidden. The bill of fare he recommended is as follows:

ON RISING, 6 A.M.

Hot Milk and Vichy. Hot Meat-Broth.
Tea, made with Milk.

BREAKFAST, 7 A.M.

Rare Steak or Loin-Chops. Mutton-Chops, with Fat.
Bacon or Ham, with Fat.
Eggs.
Potatoes. Saratoga Chips. Fried Mush.
Toast, with Cream or Butter.
Oatmeal, Wheaten Grits, or Rice, with Cream.
Fruit.
Coffee or Cocoa, made with Rich Milk.

LUNCH, 10 A.M.

Milk. Eggnog. Meat-Broth.
Stale Bread. Crackers. Zwieback.

DINNER, 12.30 P.M.

Beef-, Mutton-, or Chicken-Broth. Oyster- or Turtle-Soup.
Raw Oysters. Fish. Raw Clams.
Poultry. Roast Beef or Mutton. Game.
Potatoes. Beans. Green Peas. Asparagus. Spinach.
Tomatoes. Celery. Pickles. Lettuce. Cauliflower.
Stale Bread. Graham Bread. Corn Bread.
Fruits, with Cream.
Custards. Pie. Cakes.
Milk. Milk Coffee.

LUNCH, 3.30 P.M.

Milk. Koumiss. Clabber.
Ham or Tongue Sandwich.

SUPPER, 6.30 P.M.

Thick Meat- or Fish-Soup.
Cold Meats. Meat Salads.
Stale Bread. Crackers. Graham Bread.
Meat Jellies. Neufchatel or Cottage Cheese. Fruit Jellies.
Fruit. Cakes. Ice-Cream.
Milk Coffee. Eggnog. Milk Tea.

LUNCH, 9.30 P.M.

Hot Milk. Clam Bouillon. Beef-Tea.

With this food he believes that large quantities of liquid should be taken, even though it contains no more nourishment than an ordinary cup of tea or coffee, which should always be modified by the use of rich milk or cream. He believes that it makes little difference whether dinner be taken in the middle of the day or at 6.30 in the evening. Foods containing starch, sugars, and fats are well borne, providing there is little or no fever; but if fever is present, animal foods in very concentrated form, with fresh fruits and non-starchy vegetables, are useful. If flatulence and indigestion exist, the farinaceous articles of food should be taken very sparingly; and if constipation is present, fruits, coarse vegetables, and Graham bread should be eaten. The reverse is, of course, the rule in the advent of diarrhœa.

Tubercular patients should, of course, be impressed with the importance of regularity of methods of living and eating, and should be told that these are as important as the administration of drugs.

Dr. Wells insists, very wisely, that in many instances it is better for the patient to remain at home than to travel about to strange resorts.

While cough should not be encouraged, the patient should be encouraged to expectorate whenever it is possible.

MECHANICAL TREATMENT OF ACUTE RHEUMATISM.

DR. WALLBRIDGE, of Decatur, Ill., contributes an article to the *St. Louis Medical Journal* upon this subject.

After pointing out that in some cases of rheumatism all the remedies which we are accustomed to employ are sometimes futile, he records his employment of mechanical means, including calisthenics, for the purpose of breaking up adhesions and smoothing rough articular cartilages, with the general object of restoring the competency of the joint.

He also recommends stroking and kneading of the part affected in the centripetal direction, thereby stimulating the lymphatics and venous currents and all the surrounding tissues to greater activity. He records in his paper five cases treated in this manner. In all of them movements were increased in force as the patient progressed, and in all of them improvement took place. In several of these cases persistent medicinal measures had entirely failed to relieve the patient. It may be well under these circumstances, in addition, to administer some of the standard remedies, but this is not always necessary. In the case of sciatica, he recommends that the patient should lie down upon a table, flat upon his back, and raise the affected part as high as possible until the pain becomes severe. The farther the leg is raised from the table the less will the pain be when the patient is walking about or lying down. By alternating these movements with periods of rest, and by introducing passive movements for active movements, the scope of the limb can be increased to an extraordinary degree.

Finally, when the limb has regained to some extent its normal position, when the man is standing erect, the patient is directed to walk upon his heels in order to put the posterior portion of his leg upon the stretch. If this exercise is carried on twenty minutes in each day, in order to thoroughly exercise the parts and yet not exhaust the patient, beneficial results will accrue.

THE TREATMENT OF FILARIA SANGUINIS HOMINIS.

DR. MANSON contributes to the London *Lancet* an article upon this subject, and states that his experience in regard to the action of thymol on the filariæ of the blood coincides with that of Surgeon-Lieutenant-Colonel A. Crombie, as detailed in the *Lancet* of August 13, 1892. Soon after Surgeon-Lieutenant-Colonel E. Lawrie's article on this subject appeared in the *Lancet* of February 14, 1891, the author had an opportunity of trying thymol in the case of a negro in whose blood both species of African filaria sanguinis hominis diurna (major) and filaria sanguinis hominis perstans (minor) abounded. This patient took

thymol regularly for over two months without any effect whatever on his blood parasites,—at all events, at the time,—and six months later they were quite as abundant and just as active as before treatment commenced. The attempt to cure filarial chyluria by the administration of a parasiticide, as suggested by Surgeon-Lieutenant-Colonel Lawrie, is founded on a misconception of the true pathology of this disease and of the part played by the filaria in its production. The filaria stands to chyluria very much in the same relationship as rheumatic fever stands to heart-disease and gonorrhœa to urethral stricture: it starts the disease process, but its constant presence is not necessary for keeping it up. To attempt, therefore, to cure chyluria by trying to kill the filaria is as illogical and as useless a proceeding as to attempt to cure established heart-disease by salicylates or stricture of the urethra by astringent injections. This is evident if we consider the order of events in the production of chyluria. This is as follows: A parent filaria is lodged in the thoracic duct. In some way not yet understood it injures the walls of the vessel, causing ulceration or inflammatory thickening. In time this lesion leads to stenosis of the duct. *Pari passu* with the development of the stenosis the thoracic duct on the distal side of the stricture dilates, owing to the rising eccentric pressure from accumulating contents. After a time the stricture becomes so narrow that the lymph and chyle no longer find their way past it to the left subclavian vein. They seek, however, to reach the blood by another route; a retrograde movement down the thoracic duct sets in, and so, travelling by way of the pelvic lymphatics, the lymphatics in the walls of the abdomen, and the anastomosis between these and the lymphatics of the upper part of the body, the chyle from the intestines and the lymph from the lower extremities find their way into the circulation. Possibly there are other routes, as by the lymphatics of the œsophagus, diaphragm, and back; it is certain, however, that a common course pursued is that described, which is very much the same as that pursued by the blood in the case of obstructed portal circulation. To accommodate this increased and diverted chyle and lymph circulation the lymphatics by which it passes become enlarged and in many places varicose. The tendency to varicosity is very evident in such places as the scrotum, mucous membrane of the bladder, or wherever the lymphatics are abundant and feebly supported. In many instances these varices, where superficial, can be seen or felt and their nature readily recognized. If the inguino-femoral glands are involved, the varicose glands, so characteristic of filaria infection, are produced; if the scrotal lymphatics are in the track of the regurgitating lymph and chyle, the equally characteristic lymph scrotum may be produced. Sometimes the varix is apparent on the surface of the abdomen even, as in the case related by Sir William Roberts, and in another by Havelhing. That these varices are really part of an anastomosis, conveying chyle from the abdominal viscera to the blood, is proved by the nature of their contents; these are usually milky-white or slightly red-tinted chyle, not lymph, clear and limpid, such as comes from the legs. As the lacteals are the only source of chyle, these chylous contents of the varicose lymphatics must have come from that source, and the route followed must have been the retrograde one described. Now, if the lymphatics of the bladder happen to be involved in the compensatory anastomosis, and if they give way, as the lymphatics of the scrotum so frequently do in similar circumstances, the result is a leakage of chyle into the bladder, and chyluria. It is evident from this that the embryo filariæ, although they are generally present in the blood and urine in chyluria, have nothing whatever to do with its production. This is further proved by the fact that in some few cases of genuine and persistent tropical chyluria no embryo filariæ can be found either in blood or urine. In such cases the parent filaria must have died after injuring the thoracic duct, or possibly there may have only been a male or an unimpregnated female parasite present. Further, although the parent filaria was necessary for the production of the lesion in the thoracic duct in the first instance, its continued presence there is not necessary for the maintenance of the lesion. So that whether the filaria which originally wrought the mischief dies or lives is a matter of no consequence as affecting the chyluria; the stricture of the duct, once produced, is permanent, and the chyle will continue to flow along the compensatory anastomosis, and perhaps from time to time burst the walls of the varix and appear in the urine. That this is the pathology of most cases of chyluria is proved by more than one post-mortem examination, as well as by a multitude of observations on the living subject. This being the case, it is difficult to see in what way benefit could accrue from killing either the embryo or the parent filaria, or how an anthelmintic, even supposing it were effective as such, could possibly cure chyluria. Many declare they have cured chyluria by drugs; but those who

say so should bear in mind that nearly every case of chyluria ceases spontaneously from time to time, and also recurs spontaneously, no matter what treatment is adopted. It is altogether probable that Surgeon-Lieutenant-Colonel Lawrie's cases recovered while taking thymol, but it is not probable they recovered permanently, or in consequence of taking this drug; and so with Dr. Walsh's cases referred to by Surgeon-Lieutenant-Colonel Crombie. A knowledge of the pathology of chyluria, elephantiasis, and filarial disease in general teaches us that our endeavors ought to be directed rather to keeping the parasite alive and in a healthy state than to interfering with it and worrying it into conditions of ill health in which the functions of gestation are imperfectly performed. There is a considerable body of evidence to show that under normal conditions the filaria is innocuous, and that it is only when abnormally located, or when it acts as an irritant, or when from some cause the contents of its uterus are prematurely evacuated, or when it dies, that this parasite becomes a danger to its human host.

Some striking evidence of the nature of the connection of filaria nocturna with elephantiasis has recently been obtained by the writer, which has an important bearing on this point in the treatment of filariasis. Through the kindness of Surgeon-Major Elcum (Cochin), Dr. Manson obtained 88 slides of blood drawn during the night from 88 natives of Cochin, a district of India in which elephantiasis is excessively prevalent. Of these 88 Cochinese, 14 had elephantiasis and 74 were healthy. Of the slides from the 74 healthy subjects, 20 contained filaria nocturna embryo in abundance. Assuming that these 74 Cochinese fairly represented the general population of Cochin as regards liability to filariasis, we may conclude that about one individual in every three and a half in Cochin is infested with filariæ. Of the 14 slides from the 14 cases of elephantiasis, only one contained filariæ. At first sight this result might seem to be conclusive against the filarial origin of elephantiasis. A little reflection will show, however, that this is far from being the case; that, on the contrary, it is a very strong argument in favor of this doctrine. For why should the subjects of elephantiasis enjoy this apparent comparative immunity from the filaria in a region where it is so extensively prevalent, unless it be that the filaria is in some way connected with the elephantoid condition? The fact is that the immunity is apparent only. Elephantiasis has for its remote and originating cause obstruction of the lymphatic circulation in the part affected. This is universally admitted. The writer believes that the cause of this obstruction in the case of elephantiasis is an embolism of the afferent vessels of the lymphatic glands by prematurely-expelled ova from an aborting female filaria. If there is obstruction of this sort in a gland-guarded lymphatic area, such as the lower extremities, then it is simply impossible for filaria embryos to traverse the glands and enter the circulation; the implicated parts are cut off, as it were, from the blood. Therefore it is that, although there are filariæ in the blood in these cases, it is impossible for the embryo filariæ proceeding from the parent in the implicated area to enter the circulation. This shows the importance of protecting the filaria and the danger of injuring it. If in these fourteen Cochinese the filaria had remained healthy,—never aborted, never obstructed the lymphatics,—there would have been no elephantiasis. Therefore he holds that, once established in the human body, the filaria should be left alone,—protected rather than persecuted. Pathology indicates that the proper treatment of chyluria is in principle the same as the treatment of acquired varix in any inaccessible region. This should be rest, elevation, lowering of the tension in the lymphatic vessels by the use of saline purgatives, limited and appropriate food, and abstinence from fluids as much as possible. Certain drugs have been vaunted as specifics for chyluria; none of these have given him success of a permanent character. Temporary recovery from time to time is the rule in chyluria, and the drug which was being used at the time the urine cleared spontaneously, from healing of the rupture in the varix in the bladder, is often credited with the cure. It is difficult to understand how a drug introduced by the mouth can possibly cause the closure of a gaping varix in the bladder.

THE TREATMENT OF ANÆMIA FOLLOWING POST-PARTUM HEMORRHAGE BY HYPODERMOCLYSIS.

DR. ONUF-ONUFROWICZ contributes to the *Medical Record* the report of an interesting case:

On February 24 the author was called to see a patient who was in a state of great weakness and extremely anæmic from post-partum hemorrhage. The patient had had four normal confinements; all children were born at term, and are alive to-day. No miscarriage had occurred previously. The menstruation had been regular and normal in quantity.

About December 22, 1891, she had normal menstruation, or, at least, thought she had.

Four weeks afterwards, when she again expected it, she lost but a few drops of blood. She felt well, with the exception of a strong desire for well-seasoned and sour food, such as herrings, sauer-kraut, etc.

It was, so far as the patient remembers, on February 14 that she had a rather considerable loss of blood from the vagina, which was caused by a fall on the floor. The hemorrhage lasted three days. Afterwards she felt quite well until the evening of February 23, when she became somewhat chilly. During the following night labor came on, and on February 24, at 5 A.M., the fœtus was born, and with it an enormous quantity of blood was discharged. Blood continued to flow until 2 P.M., when the author first saw her. The quantity of blood she had lost could not be stated exactly; a certain estimate was possible from the fact that it had soaked through the thickness of two mattresses and gathered in a large pool on the floor beneath. She must have lost at least two quarts of blood. As she was rather anæmic before the hemorrhage occurred, and was not a robust person, this was a very serious matter.

When Dr. Onuf-Onufrowicz arrived he found the woman deathly pale, with hardly perceptible pulse. She complained of a peculiar oppression in the region of the heart, of nausea, and dizziness. The slightest movement of her head caused everything apparently to turn around her. When she closed her eyes she had the sensation as if her entire body were dead. She was still losing blood constantly, although it flowed but slowly. After irrigating the vagina with a one-per-cent. solution of salicylate of sodium, and thoroughly disinfecting his hands, the physician made vaginal examination. The uterus was rather soft. The cervix was dilated sufficiently to let two fingers pass in easily. The placenta could be felt as a very soft, pulpy mass adhering to the walls of the uterus. It seemed impossible to loosen the placenta without injuring the walls of the uterus and tearing the pulpy placenta to pieces, which would probably have left detached pieces of it in the uterus. As the blood was still flowing, immediate action was required. Therefore he wiped the uterine cavity out with a piece of aseptic gauze soaked in turpentine, and tried to stimulate the organ into contraction by Crede's method. When by this procedure the hemorrhage ceased, the general condition of the patient required the fullest attention.

One quart of a .7-per-cent. watery solution of chloride of sodium was injected into the rectum, to which two ounces of whiskey had been added. All the water was absorbed. Preparations were then made for infusing a saline solution into the femoral artery, according to the method of Dr. Dawbarn. This method impressed the writer by its apparent simplicity, which seems to enable the general practitioner to perform it almost at any time, as the apparatus required—viz., a Davidson or fountain syringe, a soft rubber catheter, and a hypodermic syringe—are usually at hand, and as the technique seems to be very simple. In spite of this, however, the efforts were without success.

After making connection between the Davidson syringe and the catheter, both of which had been thoroughly disinfected, the needle of a hypodermic syringe was pushed into the skin below Poupart's ligament, just where the pulsation of the right femoral artery could be felt. In order to have the least blood-pressure to work against, the needle was directed with its point towards the foot, keeping it at an angle of about sixty degrees with the axis of the thigh. At first no blood came through the needle. The needle was then taken out and tried for the second time without success. The panniculus adiposus of the patient (though she could not be called a fat person) was rather strongly developed. This may have been the cause of failing to strike the artery; it is probable the needle was not introduced deep enough.

But whatever may have been the cause, no further trials were made. For the purpose of injecting the fluid into the subcutaneous cellular tissue, the needle of the hypodermic syringe was connected with the catheter, which at its other end was connected with the Davidson syringe. The skin of the upper thighs was chosen as a suitable location for the infusion. The needle was introduced into the subcutaneous cellular tissue, and the solution injected (sodium chloride, 7 parts; water, 1000 parts), which was kept as hot as the hand could bear, until a rather tense tumor had formed on the surface. Then the needle was taken out and the procedure repeated in another place. The injection was made in about ten different places on both upper thighs. A little more than a pint of the solution was injected into the subcutaneous cellular tissue. The salt water was promptly absorbed, since in the course of six hours the swellings produced by the injection had entirely disappeared.

The general condition of the patient had improved during the injection, which had lasted about half an hour. The pulse had become fuller, the feeling of oppression and both the nausea and dizziness had diminished, and her face had regained some color. Judging from experience in this case, the writer thinks that

one quart of fluid, or even more, could be easily introduced into the subcutaneous cellular tissue. In a case of urgency, however, it might be better to infuse into the artery.

After examining through the abdominal walls, the uterus walls were found well contracted and no blood flowing. The fœtus was then examined. It was completely enveloped in a mass of coagulated blood; it was soft and pulpy, evidently by maceration, but it was still sufficiently preserved to allow an estimate of its age. It was three inches long, and had the appearance of a fœtus at the end of the fourth or beginning of the fifth month. Accordingly the patient must have mistaken uterine hemorrhages during the pregnancy for menstruations. Of both placenta and membranes nothing could be found among the blood-clots expelled.

On visiting the patient at 8 P.M. her general condition was satisfactory. She still felt oppressed and dizzy, but less so than before. She had the sensation as if her left arm was dead. Pulse pretty good, about 120. Temperature, 96.4° F. The vagina was again irrigated with a one-per-cent. solution of salicylate of sodium, and a pint and a half of water was injected into the rectum. This water was partly absorbed and partly expelled.

On February 25 the patient complained of headache and of pain in the various spots where the saline solution had been injected subcutaneously. The feeling of oppression had nearly disappeared. Thirst was present. No loss of blood. Uterus rather well contracted. Towards evening the patient felt chilly, and her temperature rose to 101° F. Two grains of calomel were administered, as her bowels had not moved for several days. Irrigation of the vagina with a one-per-cent. solution of salicylate of sodium t. i. d.

February 26, A.M.—The patient has had four evacuations of the bowels since yesterday. The pain where the subcutaneous injections had been made is nearly gone. Headache is still present. The temperature has risen steadily since when it was first taken; it has reached 104.4° F. at 11 A.M. Quinine (15 grains) was ordered. At 2 P.M. the temperature is still 104.4° F., so the same dose of quinine was given again. In the afternoon a considerable quantity of coagulated and liquid blood is passed per vaginam. The patient receives 15 grains of fluid extract of ergot, subcutaneously, and the uterine cavity is irrigated with a one-per-cent. solution of creoline. This irrigation produces violent pain, and morphine has to be given subcutaneously to relieve it. In the evening the patient complains of nausea, but has no pain. The hemorrhage, which was promptly checked by the ergot, has not returned. The temperature has come down to 98.2° F. at night.

February 27.—The patient slept well during the night. She has but little nausea. 15 grains of the fluid extract of ergot are given again hypodermically in the forenoon. At noon the placenta is expelled. It is a soft, pulpy mass, which is infiltrated with pus and has a most offensively foul smell. Accordingly, the lochiæ smell very foul too. Irrigation of the uterus with a sod. salicyl. solution after the expulsion of the placenta, which irrigation is repeated at night.

February 28.—The odor of the lochiæ is much less offensive than it was yesterday. Severe headache. Pain in the left arm and leg, chiefly in the elbow-joint. There is no redness nor swelling. Tongue somewhat coated. Appetite rather poor. The temperature has been rising steadily since yesterday noon; it reached 103.3° F. this forenoon, and went down to 101.6° F. in the evening. Ordered quinine (30 grains) in two doses. Irrigation of the vagina with sod. salicyl. solution twice. Castor oil as a laxative.

February 29.—Pain in the left arm and leg less severe. Intense headache, which is highly increased by the slightest movement of the head. Temperature, 98.2° F. in the morning, 99.6° F. in the evening. Ordered morphine internally to relieve the headache, which is the most prominent symptom.

March 1.—The condition of the patient is the following: She looks very anæmic; lips somewhat bluish; skin rather dry. Skin and conjunctivæ had yellowish hue, the latter especially, where covered by the lids. The breasts are flabby and of somewhat dark color; a colostrum-like liquid can be pressed out of them. Body and extremities free from swellings. No meteorism. The tongue, which showed a thick coat the day before, looks much cleaner to-day, but shows some fissures. Lungs free; 24 respirations per minute. Heart-sounds quite distinct. The second sound is somewhat prolonged. Action of the heart regular; pulse rather full, regular, 120 beats per minute. There is some enlargement of the spleen, the dulness in its long diameter being somewhat increased from above downward, say seven finger-breadths in one and five in the other direction. The percussion-sound is almost flat. Edge of the spleen distinctly palpable. The cervix is considerably swollen and admits two fingers easily. No infiltration of the parametrium or peritoneum. The lochial

discharge has nearly lost its odor. Pain in the right elbow and knee more intense. The patient has also pain in the right shoulder-joint, and the sensation as if cold water was poured on these joints. On inspection, no redness, no swelling is visible, but there is some sensitiveness to pressure. At 11 A.M., soon after the examination was made, the patient had a chill. The temperature, which was 99° F. in the morning, rose to 104.4° F. in the evening. No antipyretics were used; the patient got some moderately strong wine and fluid food, such as milk, raw or soft-boiled eggs, beef-tea, etc. Morphine to relieve the headache.

March 2.—Has still pain in the left arm and leg, and also in the abdomen. The temperature has fallen to 101.8° F. At 11 A.M. the patient has a chill, and in the evening temperature reaches again 104.4° F.

March 3.—The pain in the abdomen has disappeared after the administration of one tablespoonful of castor oil. The headache has diminished; the head aches only when the patient moves it. In the left arm and leg she has now no real pain, but the sensation of pricking, which appears only at times. Temperature, 98.8° F. in the forenoon, 101° F. in the evening.

March 4.—The patient is in much better spirits, inclined to joke, and believes that she would be perfectly healthy if the headache had entirely left her. Temperature, 100° F. in the forenoon, 100.4° F. in the evening.

March 8.—Since March 5 the temperature has not exceeded 98.6° F. The patient is still rather weak, has some headache, but feels well otherwise.

March 22.—Has been out of bed for the last few days. The headache is gone, but she still feels dizzy at times. No pain in the back, no retention of the urine, very little discharge from the vagina, fair appetite. The patient has recovered so far that she can be safely discharged. During the whole course of the disease the function of the bladder was normal, or nearly normal, and there was no excessive secretion of sweat at any period of the disease.

To sum up, the predominant features of the case were the following:

1. The course of the temperature is characterized by three typical chills and by the irregularity of the curve, which repeatedly ascends very suddenly and descends just as suddenly and steeply. Partly, however, the type is masked by the quinine given in the beginning of the disease.
2. The slight icterus which was present.
3. The enlargement of the spleen.
4. The pain in the joints characterized by the want of any objective sign.
5. The violent headache.

The case was one of sepsis, in which the general symptoms of infection prevailed. The course of the temperature was similar to that observed in cases of tropical malaria, which the disease resembled in many other points. The etiology, however, leaves no doubt as to the nature of the case in question.

Cases of septicæmia do not occur frequently in this period of antiseptic treatment.

In defence of not having made proper use of antiseptics, which the author thinks may be a charge brought against him, he states that the circumstances under which he had to act were most unfavorable. The fœtus had probably been dead for several days or weeks before it was born. The placenta was decomposed. The surroundings of the patient, especially the clothes and linen with which she came in contact, were exceedingly unclean. Rapid action was necessary, as the life of the patient was in danger; and though the hands, instruments used, and the genitals of the patient were treated strictly antiseptically, a complete asepsis could not be attained under the circumstances mentioned. Finally, the woman was very much predisposed to the invasion of microbes in consequence of the weakness which resulted from the hemorrhage.

THE TREATMENT OF THE GASTRIC DISORDERS OF PHTHISIS.

In a very interesting article upon the subject of gastric disorders of phthisis, in the *American Journal of the Medical Sciences*, DR. HABERSHON gives a treatment which he believes to be most useful in the treatment of this pitiful complication of a still more pitiful disease.

It is, perhaps, a truism to assert that the treatment of dyspepsia and of vomiting in phthisis should be directed towards subduing the progress of the lung-disease. It is certain, however, that while local measures are necessary and even indispensable in some phases of the malady, they will eventually fail or have no permanent effect if the general treatment is neglected. This is especially the case in all the early stages of phthisis, or where gastric disorders have developed in a tubercular subject before any disease in the lungs could be detected. In cases of dyspepsia which seem unusually intractable it is a wise precaution to examine the lungs, not on one occasion only, but repeatedly. An early clue may thus be

gained as to the cause of the delicacy, and appropriate remedies applied. For such cases, as well as for all forms of atonic dyspepsia, it is unnecessary to insist on the great importance of pure and bracing air, and of residence on dry soil, to supplement the medicinal treatment. Nowadays, with our numerous convalescent homes, this is not impossible even in the out-patient practice of our large hospitals. The author confines his remarks to the remedial measures found of value in the classes of vomiting where the symptom is of sufficient importance to need attention.

In all forms of vomiting certain general principles must be borne in mind.

Food of a bland and easily digestible kind should be ordered, and nothing irritating to any part of the mucous membrane of the alimentary tract should be allowed, either in the shape of food or drink,—such, for instance, as condiments, vinegar, acid drinks, or alcohol in any concentrated form.

When vomiting is frequent or severe, it is hopeless to attempt to treat the patient unless rest in a recumbent position is insisted upon. In such cases also liquid nourishment is advisable.

This is obvious enough when the symptom is the result of gastritis, but it is equally applicable in the distressing vomiting that sometimes results from the cough.

The sympathetic vomiting from irritation of the pulmonary branches of the vagus is most intractable and difficult to deal with. The vomiting will, however, subside if the patient is kept in bed and put on liquid diet. Medicinal treatment alone without these precautions will invariably fail. The object should be to allay any irritability of stomach that may be present, and bismuth in the form of carbonate or subnitrate, with bicarbonate of sodium and some sedative, such as opium or morphine, hydrocyanic acid, or bromide of potassium, should be given internally. Soda-water is a valuable sedative, and is suitable either alone or with milk.

It must be remembered that the tendency of vomiting from this cause is to cease after a time as the disease in the lungs progresses.

Under the name of mechanical vomiting, there is frequently irritability of throat or stomach present.

In the throat-affection, soothing and slightly astringent gargles will do much to lessen the irritability, and this applies also to all forms of pharyngeal irritation, from simple catarrh to the more painful forms of ulceration of soft palate or pharynx. It is of advantage to use a sedative gargle of bromide of potassium and opium in combination. To these may be added a mild astringent such as borax. Some cases of longer duration are benefited by more powerful astringents,—alum or tannin,—but these should be combined with opium or some topical anodyne. For ulceration of the fauces a powder of iodoform, borax, and morphine dusted or blown upon the ulcerated surface once or twice daily will frequently give great relief. When the throat is not especially sensitive the difficulty of expelling the sputum often gives rise to exhausting efforts of coughing. This is not always easy to deal with.

The internal use of expectorant remedies combined with iodide of potassium (three to five grains are usually sufficient), or alkalies, will do much to aid in the expulsion of secretion. Opiates may be given in small doses when the amount of secretion is small and there is an undue irritability of the smaller bronchial tubes. If, as in some cases, there is any degree of spasm in the small bronchi, iodide of potassium and carbonate of ammonium in small doses are invaluable.

Care should be taken not to press ipecacuanha, in any of its forms, where the cardiac action is feeble. But all these internal remedies are sometimes unsuccessful, and then inhalation is useful. For moist inhaling, Habershon prefers a sedative alkaline inhalation such as the vapor coninæ of the British Pharmacopœia, or, better still, a mixture of the succus conii with ammonia (ten drops of the liquor ammoniæ to the pint of hot water). When the cough is violent at night or in the early morning the dry inhalations are of more service from their greater convenience. Drops of the liquid remedy are placed upon the sponge or cotton-wool in an oro-nasal respirator, or in the form adopted by Coghill. Menthol or thymol dissolved in rectified spirit or spirit of chloroform may be used alone, or in combination with compound tincture of benzoin and eucalyptus oil. A favorite prescription of the writer's is as follows:

℞ Ol. eucalypti, ʒii;
Tinct. benzoin. comp., ʒiii;
Thymol. v. menthol., ʒi;
Spiriti chloroformi, ad ℥i.
Ft. inhalation.

Ten drops at a time to be used on cotton-wool in an oro-nasal respirator.

Oil of peppermint alone is equally effective in lessening irritability, but is disagreeable to some on account of its smell.

By far the most obstinate cases to deal with are those in which there is excessive irritability

of stomach; by this is not meant catarrhal gastritis. Vomiting follows shortly after a meal, and is often preceded by a sense of suffocation, without pain and with or without violent cough (sometimes the cough is very slight). Recourse may then be had to a drug which Sir George Paget first suggested to the author, and which he has frequently used with complete success. This is liquor potassæ (5 to 10 minims for a dose), usually with calumba, with sometimes a few minims of Batteley's solution of opium or of laudanum added.

The success of this remedy is probably due to the fact that it counteracts the excessive acidity of stomach which is so frequently present, and which is itself sufficient to keep up a certain amount of irritability of the gastric mucous membrane. It is also of value where the bronchial secretion is viscid, from the property of alkalies of rendering such more fluid.

In a patient under the writer's care at the time this paper was written, this was the only medicinal remedy which had the least effect in controlling the obstinate vomiting.

The well-known combination of creosote and opium is frequently of great benefit.

Finally, if all other remedies fail to control vomiting, a plan has been recommended by a French author for which he claims absolute success. It has the disadvantage of being somewhat heroic. He injects hypodermically one-sixth to one-fourth of a grain of morphine in the epigastric region, the patient being, of course, kept in bed or in the recumbent position. In three cases Habershon has used this remedy with considerable success. In the case of C. B., a man aged about thirty-five years, food was rejected invariably from a few minutes to half an hour after it was taken. There was no evidence of gastric catarrh. The tongue was thinly furred, but not red or irritable in appearance. The throat was sensitive, but not inflamed. The pulmonary disease was confined to the left lung. No remedies such as those mentioned appeared to have the smallest effect in reducing the vomiting, and the man was becoming rapidly emaciated from his inability to take food. One-fourth of a grain of morphine was injected in the epigastric region, with the result that for the whole of the following week there was no return of vomiting. At the beginning of the second week a smaller dose (one-sixth of a grain) was injected. The patient vomited two or three times in the course of the following few days.

In the two other cases the effect was more temporary, but neither of the patients could be kept in bed.

This remedy, from the limited experience given above, is well worthy of a trial in cases that are occasionally met with in which vomiting from this cause is exceeding intractable.

In all cases of vomiting with the cough, the patient should be recommended not to exert himself after a meal, but to lie down for half an hour or an hour, while in extreme cases he should be confined to bed.

The treatment of pharyngeal irritability has been already alluded to, and for the relief of the more severe forms of ulceration of epiglottis or larynx, which cause both cough and vomiting from the difficulty and pain in deglutition, there is little to say.

In this distressing affection palliatives are the only remedial agents. The powder referred to—of borax, iodoform, and morphine—affords great temporary relief, and the cocaine spray, applied before a meal, will often render a patient able to take food who would otherwise find it almost an impossibility. Several forms of apparatus have been devised to direct the spray upon the epiglottis or into the larynx, by the fixture of a small nozzle at right angles to the horizontal tube leading from the bottle holding the liquid. A solution of one to two per cent. of cocaine is the most suitable strength, but care should be taken not to apply the remedy too frequently, as symptoms are very easily produced from absorption of the drug.

Much might be said on the treatment of gastric catarrh, but the space is limited; suffice it to say, that absolute rest and unirritating forms of nourishment—fluid diet, if necessary—and alkaline sedative remedies are the well-known principles on which such cases should be treated.

It is impossible to lay too much stress upon the importance of successfully coping with the various gastric disturbances that arise in the course of phthisis. The elements of success are assured when a correct diagnosis has been made as to the cause of the symptoms.

IPECACUANHA IN DYSENTERY.

Dr. A. H. Hart, of Suez, contributes an article on this subject to the *Lancet*, in which he points out that the specific action of ipecacuanha in dysentery is due to its dual *modus operandi* on the intestines, as (*a*) muscular sedative and (*b*) secretory stimulant. The most characteristic symptom of dysentery is tenesmus (Dr. Woodward). There is such exaggerated peristaltic contraction of the rectum and lower portion of the colon that the

patient goes to stool from thirty to two hundred times in the course of the twenty-four hours, or sits there for half an hour at a time, straining violently, but passing little or nothing (Dr. Hilton Fagge). The patient is under the delusion that he will pass something that will do him good. The fault does not lie in the irritant to be expelled, but in the irritability of the intestinal muscles. According to Heubner, the average quantity of evacuation passed by each patient was found to be only from twenty-eight ounces to forty-two ounces. The great difficulty we have to deal with, then, in dysentery is exalted peristalsis. Ipecacuanha meets the difficulty by acting as an intestinal muscular sedative. A large dose of ipecacuanha stops tenesmus quite suddenly, and smaller subsequent doses prevent its return. With a return of the muscular coat to its normal condition the other coats lose their irritability, and the accompanying inflammation coincidently subsides. The mucous membrane is then in a suitable condition for the second action of ipecacuanha to come into play,—namely, secretory stimulation. We have now to deal with an enteritis, and here ipecacuanha acts in the same way as in bronchitis. Stimulation of the mucous membrane with secretion of mucus is effected by direct action on the peripheral endings of the gland-nerves or minute ganglia (Dr. Whitla). Ipecacuanha has the same beneficial effect in dysentery, therefore, as it has in bronchitis. The action of ipecacuanha on the liver is that of a powerful stimulant. In dysentery the hepatic functions are in abeyance and bile is absent from the stools. Ipecacuanha directly stimulates the hepatic cells, so that very shortly after its exhibition the colorless, slimy stools become feculent. In the words of Dr. Ewart, "Ipecacuanha is a non-spoliative antiphlogistic, a certain cholagogue and unirritating purgative, a powerful sudorific and harmless sedative to the heart and muscular fibres of the intestines." According to this lucid and comprehensive description ipecacuanha is a perfect remedy for dysentery. In a certain proportion of cases ipecacuanha undoubtedly fails. Dr. Maclean says, "Where it fails it is because it has been given too late, when structural changes incompatible with life have taken place in the affected intestine, or from structural diseases of the spleen, liver, and kidneys, or the combined ravages of the malarial and scorbutic cachexias." In those cases where ipecacuanha fails when success ought apparently to attend its administration, the fault probably is to be found in the diet. For three hours after the first dose of ipecacuanha only a little ice should be sucked, and after that a little iced soda-water and milk. Beef-tea or bread, or very light foods, are fatal to the successful administration of ipecacuanha, and to this cause a great many of the failures of ipecacuanha are doubtless to be attributed. On the second day the ipecacuanha can be reduced in quantity and supplemented by salicylate of bismuth, quinine, naphthol, and opium. Milk should still form the staple article of diet. Later on farinaceous foods and soups may be carefully given, but a return to solid meat should be deferred as long as possible. Mr. Chowdhovry remarks, "that the large doses of ipecacuanha, which have been found to be of great use in treating the dysentery of India, are often inadmissible by reason of the nausea thereby invoked preventing the patient from taking a sufficient amount of nourishment." Considering that the success of the treatment by large doses of ipecacuanha depends upon the condition of the patient in not taking any nourishment during the period of its administration, the failure in Mr. Chowdhovry's cases was evidently due to the fact that his patients were trying to take a "sufficient amount of nourishment," thereby actually causing nausea and preventing a cure. There are cases where ipecacuanha fails when administered by the mouth which may be very successfully dealt with by ipecacuanha and opium enemata.

TREATMENT OF CHRONIC BRIGHT'S DISEASE.

In an article in the *Medical Record*, DR. H. B. MILLARD contributes an interesting paper on this subject. After pointing out that there are, of course, cases in which the kidney is far beyond the condition in which treatment can possibly do good, he details several cases in which treatment was followed by very extraordinary results. The patients are placed upon full doses of the iodide of potassium, and in addition take Fowler's solution in large doses, with corrosive sublimate; or, in other cases, the protiodide and biniodide of mercury. He regards mercurial preparations as absolutely indispensable, and has used with great success ergotinine, caffeine, strophanthus, sparteine, arsenic, and the various preparations of iron. He also believes nitro-glycerin and strontium to be of similar value. If uric acid exists in excess he neutralizes it by means of Vichy, Vals, or similar waters, and also employed piperazin-water with phenocol.

He sends his patients to Evian, Vichy, or

Royat, and if the hepatic functions are greatly deranged, to Carlsbad, Marienbad, or Vichy.

HYDRONAPHTHOL IN THE TREATMENT OF CHOLERA.

In the *Medical News*, Dr. D. D. Stewart, Lecturer on Clinical Medicine in the Jefferson Medical College, contributes an article suggesting hydronaphthol as a remedy for cholera.

In a bacteriological study of the action of the drug he found that we have in it a medicament of extraordinary value, for it has been actually demonstrated that a proportion as high as 1 to 7000 has an undoubted inhibiting effect on the development of the comma-spirillum, and that a proportion of about 1 to 2000 (equal parts aqueous solution and culture medium) exerted a prompt germicidal action. As 1 part to 7000 parts equals about a grain to the pint, or to the avoirdupois pound, and as the contents of the small intestine, when the latter in its entire length is thoroughly distended, cannot amount to more than nine or ten pints, it would follow that, under any condition, but ten grains of hydronaphthol, if in solution, would be required to render the entire small intestine antiseptic against the comma-spirillum, preventing its development, while about forty grains, under similar conditions, would disinfect the intestine, promptly killing any spirilla present. Despite these calculations, it is, of course, somewhat difficult to accurately formulate the exact dose necessary to create immunity against cholera, or that sufficient to exert a bactericidal effect in cases of the developed disease. Fortunately, we have in hydronaphthol one that is non-toxic in doses probably much larger than would be sufficient for the latter effect. In cases of simple diarrhœa, in dysentery, and in enteric fever, frequently the author has administered a half-drachm in the twenty-four hours, continuing this often for weeks, totally without effect other than beneficial, and it is quite certain that doses much larger than these may be similarly used. The slight inhibition of gastric digestion that hydronaphthol produces is readily obviated by the administration of the latter in keratin-coated pills, which are soluble in the duodenum, or, if the drug is ingested in powder, capsule, wafer, or emulsion, by taking it between meals. It is without effect on duodenal digestion.

As a prophylactic against cholera, when, from exposure, the disease seems imminent, hydronaphthol should be taken in doses of from 8 to 10 grains four times daily for three or four days, and, subsequently, in from 5- to 8-grain doses with the same frequency. This amount will probably at once exert an antiseptic effect, and at the expiration of twenty-four hours be germicidal. In early choleraic diarrhœa it should be used in quantities of 10 grains hourly, or even half-hourly, until from one to two drachms have been taken. Here it may be, and, indeed, by choice, should be, combined with an opiate. An overwhelming testimony exists as to the extraordinary benefit likely to accrue from a prompt resort to opium in the stage of preliminary diarrhœa, Sir George Johnson's most dangerous theoretic views to the contrary notwithstanding. The extended experience of Sir Thomas Watson and Fergus, of Glasgow; Aitkin, Macpherson, Twining, Parkes, our own Flint, Sr., and many others who have passed through several epidemics, leaves no doubt as to the great utility of opium. Nevertheless, as pointed out, treatment by opium is only symptomatic, for this drug can neither destroy the comma-bacillus nor retard its development. Opium apparently acts in early choleraic diarrhœa by checking the bowel irritation caused by the spirillum or its leucomaine. If, conjointly, a second remedy can be administered that will have a lethal effect on the spirillum, the ideal treatment of cholera, at least in its early stage, has been found.

THE COMPARATIVE ACTION OF ANTIPYRIN, PHENACETIN, AND PHENOCOLL ON THE CIRCULATION AND BODILY HEAT.

In *Notes on New Remedies* is an original communication by Drs. Cerna and Carter concerning their studies of the physiological action of the three drugs named upon the circulation and heat functions. The conclusions arrived at in regard to the action of these drugs upon the circulation is as follows:

Antipyrin, in small and moderate amounts, produces a rise of the arterial pressure, this stimulating effect being due to an action upon the heart.

The lowering of the pressure by large or toxic doses is due, similarly, to a depressant action of the drug upon the heart. The remedy does not seem to influence the vaso-motor system.

Antipyrin causes an increase in the pulse-rate through paralysis of the cardio-inhibitory centres. The secondary decrease in the number of pulsations is of a purely cardiac origin,

the drug exercising a depressant effect upon the heart itself.

Antipyrin, in excessive doses only, changes the hæmoglobin of the blood into methæmoglobin.

The main conclusions regarding the actions of phenacetin upon the circulation are as follows:

Phenacetin, in moderate doses, causes a rise of the arterial pressure by acting upon the heart, and probably likewise by a stimulating influence exercised on the vaso-motor system.

The reduction of pressure by the drug, in large amounts, is mainly of cardiac origin.

The remedy increases, in small doses, the force of the heart by a direct action.

Phenacetin increases the pulse-rate chiefly by cardiac stimulation, and possibly also by influencing the cardio-accelerating apparatus.

The drug reduces the number of pulsations, especially in large quantities, primarily, by stimulating the cardio-inhibitory centres, and, later, by a depressant action upon the heart.

They conclude, therefore, that—

Phenocoll, in ordinary amounts, has practically no effect upon the circulation.

Large doses diminish the blood-pressure by influencing the heart.

Phenocoll reduces the pulse-rate by stimulating the cardio-inhibitory centres. It then increases the rapidity of the pulse by paralyzing said centres. The final diminution is of cardiac origin.

Upon the blood itself phenocoll has no action.

In their studies concerning heat phenomena the following results were reached:

Antipyrin, phenacetin, and phenocoll all fail to produce any effect on the heat functions of the normal animal.

Antipyrin produces a decided fall of temperature in the first hour after its administration in the fevered animal. This reduction is due to a great increase in heat dissipation, together with a fall in the heat production.

Phenacetin, both in septic and albumose fevers, produces a very slight fall of temperature during the first and second hours after its ingestion by the stomach, but the greatest reduction occurs the third hour after its ingestion. The fall of temperature results chiefly from a decrease in heat production, with a slight increase in the heat dissipation. The increase in dissipation is not as great as with antipyrin. Probably the delayed action of the drug depends on its insolubility.

Phenocoll causes in fever a very decided fall in temperature, which occurs the first hour after the administration of the drug by the stomach. This reduction is the result of an enormous diminution of heat production, without any alteration of heat dissipation.

Their experiments with antipyrin are in accord with the results obtained by Martin, Wood, Reichert, and Hare, together with Destree, and they have reached the conclusion that antipyrin reduces the temperature by a decrease in heat production, and that heat dissipation also falls with the production.

In their experiments with antipyrin the composite curve shows the rise of heat dissipation. They believe, therefore, that this phenomenon is effected through a thermotaxic rather than through a thermogenic mechanism. They further believe that phenacetin and phenocoll reduce the temperature by a decrease in the heat production through their action on a thermogenic nervous centre. The fact that all drugs here studied fail to produce any effect on the normal heat function proves that they affect these functions through the nervous system. Probably the fact pointed out by Hare in his excellent essay, that many investigators do not take into account other circumstances, such as tying animals down, and confinement in a box, may explain many of the results obtained by some observers in the normal animal.

In concluding this study, they think they are justified, judging from the results of their experimentation, in saying that of the three drugs in question, the safest for practical purposes, especially as regards an action upon abnormal temperatures, would be phenocoll. Phenacetin is slow, on account, no doubt, of its insolubility, and is comparatively feeble as an antipyretic. Antipyrin, it is true, is insoluble, and prompt in reducing feverish conditions, but its action upon the circulation, particularly upon the heart, is so pronounced, even when administered in therapeutic doses, that it is, for this reason, a dangerous substance to use. Phenocoll, on the other hand, is readily soluble, rapidly absorbed, and, undoubtedly, promptly eliminated. Its power to reduce abnormally high temperatures is very decided, and it does this in therapeutic doses, without depressing the circulation. Phenocoll, therefore, would seem to be superior to antipyrin and phenacetin as an antipyretic.

THE TREATMENT OF SCORPION-STING.

BANERJIE contributes to the *Lancet* his opinion concerning the best treatment for the sting of the scorpion. He has treated forty-six cases of scorpion-sting between April and June, 1892.

Of this dreaded arachnid (*Scorpio afer*) there are four varieties: (*a*) dark brown, (*b*) reddish-brown, (*c*) one the color of prepared leather (pale yellow), and (*d*) one which is slate-blue. Of these the first and last are the most deadly. The first mentioned has the largest sting (half an inch long) and measures altogether four inches. The last, which is also most to be dreaded, measures from mandibles to telson half an inch to an inch and a half. The larger animal is sluggish, and prefers dusty and manure-like soil; the smaller is found in stony places, abounds in the hills, and can endure extremes of temperature. The patients all suffered in the same way, with, of course, constitutional modifications. The part stung was reddish and œdematous, and the pores of the sweat-glands were unusually distinct. Severe burning pain was complained of in the part and extended rapidly. In some free perspiration occurred and was followed by much excitement and delirium. Females did not suffer much, and children wept much, but without exhibiting severe local effects. Men of strong build suffered most, and in some instances were very excited; but resolute persons expressed no great suffering. In all cases the joint above the part stung was almost stiff, and in some there were febrile symptoms with severe headache. Ten of the cases were treated with ipecacuanha poultices, as text-books recommend, but only with transient benefit, as, in addition, chloroform had to be used in stupes. This relieved all pain, but the erysipelatous swelling of the affected parts remained, and continued in severe cases for seventy-two hours, requiring still further treatment. In two cases chloroform alone was used and gave instant relief, but swelling remained in this instance likewise. In five cases hydrate of chloral pure and simple was rubbed into the part. It answered well, relieving pain instantly, and with this remedy there was no subsequent swelling. The action of chloral was, moreover, less evanescent than that of chloroform. In order to use it in a more convenient and more rapidly absorbable form it was liquefied with the addition of camphor (three parts of chloral and one of camphor), and to render its action still more rapid the part was punctured with a pin or needle before its application. Menthol-camphor and butyl-chloral-camphor were also found efficacious. Without wishing to depreciate the value of other methods, this treatment, which was found successful in twenty-seven cases, will probably have a more extended trial from the profession in the tropics, in order that its value may be determined and its efficacy established.

THE SURGICAL TREATMENT OF TRACHOMA.

SYDNEY STEPHENSON (*Medical Press and Circular*, January 25, 1893), after a review of the various surgical procedures applied to the treatment of trachoma, describes his own method of operating, and draws the conclusions which follow: He employs two kinds of forceps,—first, ordinary stout dissecting forceps; second, stirrup forceps modified from Knapp's pattern. The rollers in his instrument are nine or ten millimetres in length, and their surfaces are free from creases. Experience has convinced him that the comparatively small diameter—one to one and a half millimetres—recommended by Knapp is insufficient to allow the rolling action of the instrument to come into play when dealing with swollen tissues. In his instrument the diameter of each cylinder is at least three millimetres. Expression is indicated in the following conditions:

1. Follicular disease, in which discrete follicles are scattered over the surface of an otherwise normal conjunctiva. Here it is a simple matter to seize and crush each individual follicle with dissecting forceps, and beyond this nothing more need be done in the majority of cases.

2. In trachoma of recent origin, expression often yields excellent results. As a first step it is necessary to squeeze out the contents of any grains which project markedly above the level of the conjunctiva, and then to subject the retro-tarsal folds and the entire extent of the conjunctiva to the squeezing process. The instrument he prefers for this latter purpose is the stirrup forceps, and a word in regard to the way in which it is used may not be out of place. In the first method, which applies to either lid, one roller is placed on the cutaneous and the other on the conjunctival surface. The blades are then closed and the forceps firmly drawn towards the free margin of the lid, by which means the roller action is brought into play and the morbid material squeezed out from the conjunctiva. In the second method, which applies to the upper lid only, the latter is everted, one roller pushed deeply into the cul-de-sac, while the other is placed over the tarsal conjunctiva as near the free border of the lid as possible. The blades are then closed and the instrument drawn towards the free edge of the folded conjunctiva, so that each roller is in contact with mucous membrane only throughout the whole of these manipulations. In the third method, a swollen and granular fornix may be exposed and submitted boldly to the action of the forceps. The material thus ex-

pressed is often forcibly thrown to a considerable distance, and may fall into the operator's eye, an accident not unlikely to be followed by serious consequences. In order to meet this contingency it might be well for the surgeon to wear a pair of protective goggles. (Compare abstract on this page.)

In all these manipulations the conjunctiva passes through the forceps much in the same way as linen is passed through a mangle, with the result that the diseased material is extruded without damage to the actual conjunctival tissue. Knapp has pointed out that it is well to make traction on the forceps in as straight a line as possible, so as to preserve an equable pressure on all points of the rollers.

Since it is now known that the tarsus itself participates in the morbid processes of trachoma, it becomes of importance to subject that structure to considerable pressure during the performance of the operation. Further, the caruncle and the extremities of the superior fornix—which may be regarded as especial fastnesses of infectious material—should receive particular attention. In these positions the dissecting forceps may often be used with advantage.

3. In old and obstinate cases of trachoma expression at times affords results of an unexpected nature. The details of operation differ, however, in no respect from those already described. The painful character of expression leads many surgeons to employ a general anæsthetic, but personally he has never used anything but cocaine. All the lids may, if necessary, be operated upon at one and the same sitting.

It is noteworthy that the conjunctiva is extremely tolerant of the apparently rough treatment involved in the operation of expression. The softer material of the granulation breaks down long before the pressure used is sufficient to damage the conjunctiva itself, and the surgeon can at once judge when enough has been done, not only by the appearance of the parts, but also by the feeling of the tissue underneath the forceps.

After the operation it is well to encourage bleeding by the assiduous application of hot water to the closed eyelids. No dressing is needed; the eyes are simply rinsed out occasionally with a simple antiseptic lotion.

Ecchymosis of globe or of lids, redness of the conjunctiva, and some slight swelling of the eyelids may each or all follow the operation, although as a general rule there is remarkably little reaction. At the same time it is by no means rare for a grayish membrane to make its appearance on the palpebral conjunctiva a day or two after the operation. This seldom lasts for more than a short time, and portends no serious result. As a matter of fact, such membranes commonly follow any operative interference with the conjunctiva. One further point should be noted. Adhesions are liable to form between adjacent folds of conjunctiva, more especially in the lower lid, and such adhesions should be searched for systematically and broken down with a probe. To complete the cure of trachoma in any given case, expression may have to be repeated several times.

THE DANGER OF INFECTION WHILE OPERATING FOR TRACHOMA.

The following editorial note occurs in the *Ophthalmic Record* for February, 1893: The use of the forceps for the cure of trachoma is not free from danger to the operator and assistants, since some of the blood full of micro-organisms may, by accident, be thrown into their own eyes. This occurred to two surgeons some years ago while operating on a case. At the same moment the material was thrown into the eyes of each. The one believing in the germicidal power of nitrate of silver at once expressed a willingness to have a few drops of a 10-grain solution put into each conjunctival sac. As his reward he escaped the development of a case of trachoma. The other declined to submit to this preventive measure. His punishment was a well-developed case of trachoma, which was not cured for a long time.

THE TREATMENT OF BLEPHARITIS WITH CORROSIVE SUBLIMATE.

Dr. F. Despagnet (*Recueil d' Ophthalmologie*, November, 1892) describes his method as follows: First, the condition of the lachrymal ducts must be examined, and these must always be in a healthy state. Then two sublimate solutions made with glycerin are prepared, one of a strength of 1 to 100, which the patient himself must use daily, applying it to the base of the eyelashes on the cutaneous surface. If through inadvertence or awkwardness he allows a little of the lotion to penetrate to the conjunctiva, the harm, at most, will amount to a slight sensation of burning, which can be stopped by an application of cold water. The second solution is of a strength of 1 to 30, and is applied by the surgeon himself every two days. Besides painting the external base of the eyelashes as soon as possible, the excess of the solution remaining on the skin is removed with a little cotton, resting on the eyelid, so

that the moisture may not be absorbed into the eye in the act of winking. This solution produces a sensation of intense burning. Nevertheless, it is not so intense as might be supposed from the character of the solution, as the sublimate loses some of its caustic nature when it is dissolved in glycerin. It is understood that the base of the ulcer must be freed from crusts, and also the eyelashes, so that the medicament may come in contact with the tissue. From the first week of treatment the improvement is very marked, and it does not take more than two months, according to this author, to cure the most inveterate blepharitis, even that variety which induces a thickening of the outer edge of the lid, or, in other words, hypertrophic blepharitis.

TREATMENT OF ULCERS OF THE CORNEA.

BARTON PITTS (*Annals of Ophthalmology and Otology*, January, 1893) thus outlines his views in regard to the treatment of several types of corneal ulcer:

In superficial ulcers of a phlyctenular character he uses calomel, dusted in the eye, with considerable friction. Atropine in a solution of from two to four grains to the ounce is especially sedative in ulcers of the cornea associated with much inflammation of the conjunctiva. In ulcers not associated with acute inflammation he does not hesitate to use freely as a local sedative solutions of cocaine as strong as forty grains to the ounce. Hot applications, in the form of a large cloth or towel wrung out of boiling water, but never poultices, are both soothing and beneficial. He has reserved for the last the mention of an agent that has proved more than satisfactory to him in curing ulcers of the cornea. It does not deserve to be put in the same class with other local agents, but rather as the one and only agent, safe and certain, for the curing of ulcers of the cornea, so far as can be said of any artificial means of curing disease. He refers to the topical effect of the *actual cautery*. He considers it the safest and surest of all agents; even in superficial ulcers of a phlyctenular character he prefers to use it; and in deep ulcerations, involving the substance of the tissues, and likewise in extensive sloughs of the cornea, it is to be depended upon. Its action can be carefully limited to the diseased portion, destroying it without interfering with the nutrition of the healthy structures, and it leaves less opacity of the cornea than any other form of repair. His method of using it is first to cleanse the parts as thoroughly as possible with a 1 to 5000 solution of bichloride of mercury, and touch thoroughly the entire ulcerated portion of the cornea with the point of the platinum electrode heated to a red heat by an electric battery. A battery useful for such a purpose, however, is inconvenient to transport, and expensive. For ordinary, occasional use, a silver probe or the point of a strabismus hook, heated in the flame of an alcohol-lamp to a bright heat and quickly applied, is equally efficacious and inexpensive. Such a procedure seems formidable, and is not always easily explained to the timid; but it is safe, quick, and marvellously efficacious in its effects. Of course an eye to be cauterized should be cocainized and fixed firmly by the pressure of the finger upon the globe, through the upper and lower lids, or the patient etherized, care being exercised that the cautery-point be limited to the diseased portion of the cornea, and the parts touched lightly, that the anterior chamber be not penetrated. Usually one application, if properly performed, is sufficient to bring about a healthy reaction, with healing. Should repeated cauterizations, at intervals of three or four days, be necessary, such can be safely done.

REMARKS ON THE TREATMENT OF PURULENT CONJUNCTIVITIS.

A. A. FOUCHER (*Annals of Ophthalmology and Otology*, January, 1893) agrees with those authors who treat purulent ophthalmia by the use of cold, of nitrate of silver, and antiseptic lotions. Nitrate of silver, 15 grains to the ounce, helps to diminish the purulence, when the lid can be easily everted without causing much pain to the patient. He suggests as antiseptic washes a saturated solution of boracic acid, a solution of bichloride of mercury 1 to 5000, of cyanide of mercury 1 to 1500, of permanganate of potassium, or of peróxide of hydrogen, looking on them rather as astringent and cleansing agents than having any other use. In his practice he prefers the saturated solution of boracic acid, but would be willing to substitute for it the cyanide of mercury lotion. Cold, by means of ice applications, is highly recommended. Ice is objected to in the treatment of young children, and parents themselves are loath to accept it. In the case of the newly-born the chemosis is less marked than with adults, and the danger is therefore less imminent. For this reason he uses iced compresses in a great number of these cases; but when he deals with a serious case of purulent ophthalmia, even in a newly-born patient, and the case is accompanied with much swelling, he resorts to ice, at least for a few days, without the least hesita-

tion. He does not scarify a fleshy chemosis. Sometimes blood depletion of the temples is practised with profit. He has never deemed it advisable to relieve constriction by incising the eyelids, whereas the ice always brought about sufficient reaction to render this mutilation useless. He states that corneal complications have been rare and of a trifling character with subjects whose treatment he has been in a position to control since the inception of the disease. In these cases, as well as in those in which corneal complications existed before he instituted the treatment, he continues to apply cold, and notwithstanding a prevailing opinion which, to the contrary, advises the suspension of this treatment in such cases, he is inclined to believe that an aggravation of these complications results from the use of warm compresses.

[There is no doubt that the proper application of cold is of the utmost service in the treatment of purulent conjunctivitis, but it is equally true that sloughing of the cornea, in many instances, is favorably modified by the proper application, not of "warm compresses," but of *hot* compresses, the temperature being at least 120° F., and so applied that this degree of heat is maintained.—ED.]

NITRATE OF SILVER IN THE TREATMENT OF PURULENT CONJUNCTIVITIS.

W. T. MONTGOMERY (*Annals of Ophthalmology and Otology*, January, 1893) desires to emphasize, in the treatment of this disease, the following points:

1. The nitrate-of-silver solution, at least 60 grains to 1 ounce once daily. If the purulent discharge does not continue to lessen, increase the strength of the solution up to 120 grains to 1 ounce. He has not found it necessary to go above this. He has not had any bad after-effects from the use of these solutions, as cicatricial contractions, staining of tissues, etc.

2. Make the application with the medium-sized camel's-hair brush, and be sure to brush the entire palpebral and retro-tarsal portions of the membrane.

3. Cleanse the eyes with as little irritation as possible. Wiping the eyes, and especially the use of the syringe or pipette for washing out the conjunctival sac, cannot be too strongly condemned.

4. The use of the iced compresses for at least one hour after each application of the strong solution. The best mode of applying these compresses is to have a dozen or more small pledgets of absorbent cotton on a block of ice, and change often enough to keep them cold. In adults and children old enough to express themselves he has found these grateful, and believes them to be a valuable aid in reducing the inflammation.

5. The antiseptic lotion least irritating to the eyes is the best, and the boracic-acid solution is his preference. Used in the manner here indicated, he does not know of any remedy which has given him greater satisfaction than the nitrate of silver in the treatment of purulent conjunctivitis.

POULTICES IN OPHTHALMIC SURGERY.

DR. G. C. SAVAGE (*Ophthalmic Record*, February, 1893) records his experience with poultices in ophthalmic practice, and gives several cases in which this therapeutic measure served a useful purpose. His method is to order a poultice of flaxseed-meal to be applied, and to be renewed as often as it becomes cool or dry. In one case of abscess of the cornea a poultice was used in this manner for five days, resulting in absorption of the pus. In another case of cataract extraction with suppuration of the corneal wound, in addition to the use of nitrate of silver in the sloughing incision and the free employment of boracic-acid lotion, and also eserine, poultices were ordered, at first almost constantly and later intermittingly, and discontinued at the end of a week. Although the case was unfavorable in every respect (indeed, it looked hopeless), the redness, swelling, and suppuration subsided, and the pupillary membrane which was formed was divided at the end of four weeks, the operation resulting in good vision. Savage does not give in detail other cases, but refers to some where there was suppuration in the cornea or within the eye, and its progress was checked and the absorption of the pus promoted.

He concludes as follows: In all forms of ocular (not conjunctival) troubles attended by suppuration, a poultice is a therapeutic means of great power. It is never dangerous. In iritis of any form it will do good in relieving pain and lessening congestion. In inflammatory glaucoma, before an iridectomy is done, it will relieve greatly the suffering of the patient. In orbital cellulitis, if applied early, it will prevent suppuration. Flaxseed-meal has been used in all poultices. The proper consistency is attained as rapidly as possible by mixing the meal with boiling water on a heated plate. The mass is spread on half of a piece of cloth three inches wide and six inches long to the depth of an eighth of an inch and not entirely to the edge, when the other end of the cloth is folded

over it. The under surface is then applied to the eye, so that the upper and inner borders rest on the brow and nose, thus lessening the pressure on the eye. A piece of oiled silk four inches square is then placed over the poultice, and the whole is kept in place by a light four-tail bandage. When cool or dry, another poultice should be ready for application on its removal. A poultice should be in continuous use for the first twenty-four to forty-eight hours, even if the sufferer is much sooner relieved. Afterwards it can be used intermittingly as the indications may arise.

EXTRACTION OF STEEL FROM THE INTERIOR OF THE EYE WITH AN ELECTRO-MAGNET.

ALVIN A. HUBBELL (*Ophthalmic Record*, February, 1893), in a most interesting paper, reports ten cases in which steel was extracted from the interior of the eye by means of the electro-magnet, and in his remarks writes as follows: In using the electro-magnet in a case in which the steel has either positively or probably entered the eyeball, it should be made to pass as directly as possible in the known location in lines of least resistance and through an area of least functional value. Sometimes the accident wound meets these requirements, but oftentimes it does not. If the steel has penetrated into the vitreous through the cornea near its margin, and through the iris and suspensory ligament of the lens, there is always great danger of adding further traumatism to the parts and especially to the lens. That part of the ball through which the magnet can be introduced with least danger to the structures and to sight, and at the same time most accessible to every point within the vitreous, is the sclera just in front of the equator of the ball, preferably, in most cases, on the outer side between the external and inferior recti muscles. It is better to make this sclerotic incision after dissecting up at the place chosen a small triangular flap of conjunctiva, or excising a piece and stopping the hemorrhage. The early use of the electro-magnet is preferable to waiting until pathological processes follow the introduction of the steel. Sometimes, it is true, the eye will tolerate steel for an indefinite period of time, perhaps for years, but this is the exception rather than the rule. By waiting, the steel becomes embedded in exudates, when the magnet cannot attract it at all, and if the eye then becomes inflamed, enucleation is the only safe treatment. The proper use of the magnet is usually so successful, when applied early, that there is no alternative between immediate operation and delay.

The form of the electro-magnet, especially at the extension-points, is a matter of no little importance. The magnet itself should be as light as possible consistent with sufficient attracting power, and of a shape convenient for handling. The extension-point should be as near as possible to the coil around the core, and no longer than is necessary to reach the supposed location of the steel; certainly never more than two centimetres, and at the ends from a half to one and a half millimeters in diameter. The power of attraction diminishes very rapidly as the end is lessened in size or carried farther from the coil around the core. Again, the point should not be rounded, but flat at the ends, and also on the sides from the ends backward for a short distance, and by this means a larger surface of contact is presented and the holding power increased. In conclusion, Hubbell desires to emphasize anew the utility and benefits of the electro-magnet in ophthalmic surgery, to recommend its early employment, to call attention to a special form of the instrument, and to advocate a more general adoption of the sclerotic incision as the safest method of reaching steel when it lies at any point, supposed or known, in the vitreous humor or inner coats of the eye, even to the disregard of the original wound in many cases.

PTOSIS AND ITS SURGICAL TREATMENT.

M. BRUN (*Paris Thesis;* abstract in the *Annales d' Oculistique*, December, 1892), after an exposition of the different proceedings used for the cure of ptosis, describes and adopts the process proposed by Gillet de Grandmont. The main points in this proceeding, which has yielded the author good results, are as follows:

After having seized the superior eyelid with Snellen's forceps, the skin is incised parallel to the outer edge of the eyelid at a distance of three or four millimetres, and for about two and a half centimetres in length. Raising the two cutaneous sections, the orbicularis muscle is detached and excised in a corresponding portion, so as to lay bare the whole of the tarsal cartilage almost to the ciliary edge, and there comprises the Sappey orbito-palpebral muscle, commonly designated under the name of the tendon of the elevator. An incision is made of the thickness of the tarsal cartilage to the extent of about two centimetres parallel to the outer edge of the eyelid and at a distance of from two to four millimetres from its edge.

A curvilinear incision with an inferior concavity is made, extending from one extremity of the first incision of the cartilage to the other. This incision must be of the thickness of the integuments, so that the section must be equal to the estimate made of the extent of the ptosis. This estimate, moreover, is the most delicate point in the operation. Constant practice is required to do it with precision. Gillet de Grandmont measures the comparative distance from the outer edge to the eyebrow. With the aid of three stitches of catgut (oo), the superior or orbito-palpebral section is sutured to the inferior or tarsal section without touching the skin. It is understood that the ligature with threads is not made until the pressure with the Snellen's forceps has been relaxed. It is not necessary to deal with the skin, since the drawing together is so easily accomplished that immediately after the operation nothing is noticeable but a cutaneous wrinkle corresponding to the natural palpebral line. This operation has the advantage of preserving the fold of the palpebral skin, of avoiding a vertical cicatrix, of gaining the elevating movements of the eyelid without calling into play the occipito-frontal muscle, and, finally, of shortening the elevator.

TREATMENT OF REBELLIOUS BLEPHAROSPASM.

M. VINCENT (*Lyon Médicale*, October, 1892; abstract in *Recueil d' Ophthalmologie*, November, 1892) suggests the following rules for surgical interference in the cases where other measure shave failed:

1. *Superior Eyelid.*—The needle threaded with catgut is passed through a fold of the skin even with the frontal protuberance, and brought out again above the eyebrow, and then penetrates at the base of the eyelid. It is drawn under the skin so that it crosses the superficial layer of the tarsal cartilage and passes out at the edge of the lid. Three threads are passed through in this way, and the same operation may be done for the inferior eyelid, its cutaneous attachment being on the cheek-bone.

2. Horizontal incision of the external commissure of the eyelids to the extent of two centimetres.

3. Bordering the edges of this incision with the conjunctiva of the external cul-de-sac.

4. Tightening the ligatures, even to the production of a very pronounced ectropion. The formation of this temporary ectropion gives an opportunity to treat the corneal ulcerations, the starting-point of the blepharospasm; to check the rubbing of the lashes on the cornea; to put the conjunctiva on the stretch, so as to allow the easy application of remedies; and, finally, the rolling up of the tarsal cartilages.

EXTRACTION OF CATARACT WITH REFERENCE TO THE AVOIDANCE OF ENTANGLEMENT AND HERNIA OF THE IRIS, OR OF ATTENUATING THE EFFECTS OF SUCH ACCIDENTS.

NICATI (*Archives d' Ophthalmologie*, December, 1892) comes to the following conclusions:

1. Ordinary iridectomy prevents hernias, but it will not prevent incarceration.

2. Open iridectomy, made by putting the periphery of the iris on the knife and effecting the incision of the iris during the section, lessens the frequency of incarcerations and hernias, but does not prevent them.

3. Only a large iridectomy, made by placing the iris on the knife, seems absolutely effectual.

4. Cystotomy after the manner of Gayet, made at the same time the corneal section is performed, is a better prevention of capsular incarcerations than the other methods.

5. A corneal section effectually prevents a cicatrix from serious danger of hernia and of inclosure.

RIPENING OF IMMATURE CATARACTS BY DIRECT TRITURATION.

BOERNE BETTMAN (*Annals of Ophthalmology and Otology*, January, 1893), believing that Förster's method of ripening cataract is open to many objections, for the past six years has practised direct trituration, which, in his opinion, has great advantages over the indirect method. In order to avoid an unnecessary rubbing of the cornea and squeezing of the iris, and to prevent an unwarrantable mutilation of the latter (iridectomy), he inserts into the anterior chamber, after having made an incision into the corneo-scleral margin, his trowel-shaped spatula. The flattened end of the instrument is placed on the lens surface within the pupillary space. If the pupillary field is small, it is slid underneath the iris below and on either side, and the lens subjected to trituration. If the cataract is of the soft variety, the cortex may be seen to break down while being manipulated. Ordinarily several days ensue before any striking changes appear. The construction of his instrument—namely, its trowel shape—prevents contact with the iris, the shank being in a higher plane than the colored membrane. In his former cases he reported seventeen uniformly successful cases matured accord-

ing to this method. The same results have followed his later operations. Bettman draws the following conclusions:

In none of these cases was trituration followed by any untoward symptoms, neither after the first operation or subsequent to the removal of the cataract. In all trituration was accomplished without doing an iridectomy. The withdrawal of the keratome, if not quickly executed, is followed by an outflow of a large quantity of aqueous humor, resulting in contraction of the pupil. As the tip of the trowel-shaped spatula is small, no inconvenience results therefrom. It rests in the reduced pupillary area, and can be easily slid behind the iris and the covered part of the lens triturated.

The cortex rapidly underwent degeneration and vision proportionately decreased. So rapidly did the cataracts mature that extraction and restoration of useful vision were soon after accomplished.

In none of these cases did he experience any difficulty in removing opaque cortical substance. It was expelled in mass, owing, no doubt, to the greater cohesiveness of triturated cataracts than those matured through the natural method, where the cortex has undergone a more complete degeneration.

In all cases the vision was quite good on admission to the Infirmary. One counted fingers at ten feet, the other at eight, the third at six feet. They did not belong to the amber-colored variety, where the lens never becomes entirely opaque, and where entire loss of vision rarely ensues, but rather to the softer forms of nuclear cataract, having the broad striæ in the cortex, indicative of the softer variety.

THE ACCIDENTS CAUSED BY INJECTIONS OF COCAINE.

Cocaine is so frequently used in ophthalmology that it is well for oculists to know the accidents which it incurs when it is given in strong doses; for instance, in hypodermic injections for operations on the eyelid, or in retro-ocular injections for enucleation. At one of the meetings of the Surgical Society of the year 1892, BERGER (*Soc. de Chirur.*, 1892; abstract in *Archives d' Ophthalmologie*, November, 1892) gave an account of a mortal intoxication from cocaine in a patient who had received an injection of two soupspoonfuls of a solution of cocaine (1 to 50) for an operation for the radical cure of hydrocele. After the operation the patient became faint, and in twenty minutes was in complete coma, the face and limbs moving convulsively and the pupils dilated. He was then seized with tetanic rigidity on the right side, and finally died of cardiac syncope.

The medico-legal autopsy was made by M. RICHARDIÈRE, who made a statement on this occasion of the result of eleven autopsies of poisoning from cocaine. In the present case a general congestion of the lungs and of the meninges was found, besides a mitral insufficiency and lesions from alcoholism. The tunica vaginalis seemed absolutely normal, and did not communicate at all with the peritoneum.

M. LECHIS did not admit that the method of anæsthesia by cocaine was responsible for the errors committed. He had demonstrated in the observations on death from cocaine which have been published that twice only the dose was less than 10 centigrammes, and these two deaths may be explained by other causes. So, until further knowledge, it should be admitted that the most manageable dose amounts to 10 centigrammes. Solutions of 5 or 10 per 100 must not be used, but those of 1 or 2 per 100 may be employed. Besides, with small doses considerable operations may be managed.

THE MOVEMENTS OF THE IRIS, AND THE ACTION OF ATROPINE AND ESERINE ON THE PUPIL.

It is generally admitted, in order to explain the movements of the pupil, that there is complete antagonism between the oculo-motor nerve and the sympathetic. The oculo-motor presides at the contraction and the sympathetic at the dilatation of the pupil. At the instigation of Professor Schiff, MLLE. LITTAUER (*Paris Thesis*, 1892; abstract *Annales d' Oculistique*, December, 1892) has undertaken a series of exact observations, with the result of showing that the sympathetic remains entirely unaffected by the movements of the pupil. Mlle. Littauer has succeeded in cutting the oculo-motor in the cranium of a cat without touching any organ or important vessel. This done, she was able to study the effects of the section of this nerve and the actions of the excitations on the peripheral points. Mydriasis due to a paralysis of the third pair, myosis to irritation of this nerve. There is, therefore, no mydriasis by direct action on a dilatory nerve.

It was interesting to study the antagonistic action of atropine and eserine instilled simultaneously. Certain observations allowed Mlle. Littauer to think that the action of atropine was principally exerted upon the periphery of the nerve of the third pair and that of eserine on its central part. From these facts it would follow that the presence of atropine ought al-

ways to prevent the effect of eserine, for it cuts off the road for the action of the latter drug. It is known, in fact, that in practice eserine never prevails against atropine when the two are brought in antagonism. Nevertheless, as the present state of affairs does not allow one to be positive about this localization of the effects of atropine and of eserine, the question calls for a new research. To sum up the results of the observations of this author: The sympathetic must be deprived of all action on the pupil; it affects the vessels of the iris only slightly; the dilatation and contraction of the pupil depend upon the oculo-motor, and the myotic and mydriatic agents act directly upon it.

WARM SUBLIMATE SOLUTIONS.

AHL (abstract *Archives d' Ophthalmologie*, November, 1892), by means of a large number of bacteriological and chemical researches, has ascertained that the application of heat to solutions of sublimate increases their antiseptic power, while it diminishes their poisonous and corrosive effects. The following are his conclusions:

1. The antiseptic action of a solution is increased if it is heated to a temperature of 40° C.

2. A solution of 1 to 2000, or even of 1 to 1000, heated to 40° C., may be used without danger for deep-seated lesions of the lungs, of the pleura, and of the peritoneum, the bactericidal effect corresponding to that of a cold solution of 1 to 500.

3. A solution heated to 40° C. stimulates the generative action of the tissues and accelerates the healing process. On the other hand, a cold solution of 1 to 1000 has less antiseptic action than a hot solution of 1 to 10,000, because the latter penetrates farther.

4. Weak and hot solutions of sublimate may be used with perfect security, so far as the caustic effects are concerned.

ABADIE'S METHOD FOR THE TREATMENT OF MIGRATORY OPHTHALMITIS.

E. BAQUIS (*Annali di Ottalmologia*, vol. xxvi. fasc. 4 and 5; abstract *Archives d' Ophthalmologie*, December, 1892) has been encouraged to experiment according to Abadie's method, as well as by the researches of Dr. Ovio, according to which weak sublimate solutions may be injected into the vitreous without causing chronic lesions and without causing the vitreous to diminish in any way the micro-bicidic power of the sublimate solutions, no matter how weak they may be. The case was that of a woman twenty-six years of age, seriously injured in the left eye by a piece of broken crockery. There was rapid cicatrization, forming an adherent leucoma, but at the end of about three months irido-cyclitis occurred in the eye and serious sympathetic ophthalmitis in the fellow-eye. By means of an equatorial puncture the author injected three drops of a sublimate solution (1 to 500) into the sympathizing eye. The next day there was marked improvement. The injection was repeated eight days later, and the results were again excellent. After a treatment of twelve mercurial frictions the reabsorption of the exudates in the pupillary field of the right eye was accomplished, so that ophthalmoscopic examination became possible, and vision was greatly improved. It is remarkable that this sympathizing eye then showed an intense neuro-retinitis. After six months the cure continued.

SURGICAL INTERFERENCE IN CASES OF SEVERE NEURALGIAS OF THE PELVIS.

BATUAUD (*Revue Médico-Chirurgicale des Maladies des Femmes*, November 25, 1892) holds that the common pelvic neuralgias are those associated with hysteria and neurasthenia. The operations done are laparotomy for simple exploration, which may be followed by the unilateral removal of the adnexa; or hysterectomy if the tubo-ovarian operation proves unsuccessful. He cites three cases of laparotomy which were perfectly successful; fifteen cases of hysterectomy after laparotomy proved unsuccessful; and, lastly, ten cases of hysterectomy, one of which proved fatal. After an analysis of the cases, Richelet believes that hysterectomy is preferable to laparotomy. According to Terrier, removal of the ovaries sometimes gives good and sometimes bad results.

Hysterectomy for neuralgia in neurasthenic cases is of no value. In two cases of hysteria the neuralgia was dispersed, only, however, to become centred in the arms. The author is not enthusiastic over the suggestion of hypnotism, but thinks it might be tried with advantage, as its results would not prove dangerous. In some cases the neuralgia is spontaneously cured, as in a case reported by Verneuil. This woman had suffered intolerable pain, and he concluded to perform a laparotomy; but, in the mean time, the patient had an attack of acute mania,

and as a result of this the neuralgic pain immediately ceased.

The non-operative treatment consists in the administration of morphine, being careful, however, to avoid the morphine habit, sand-friction, stimulating baths, anti-neuralgic liniments, and salicylates if indicated. If hysteria dominates, hydrotherapy, the valerinates, and static electricity are to be employed.

If the condition be that of neurasthenia, the alimentary canal should receive careful attention. Graduated exercises, massage, general electrization, and hypodermic transfusions are very useful.

THE ANTISEPTIC MANAGEMENT OF WOUNDS.

Sir Joseph Lister (*Lancet*, January 28, 1893), on the basis of laboratory experiments. and of clinical experience, states that carbolic acid is far more efficient as a germicide in surgical work than is bichloride of mercury.

The sponges he prepares by washing well with soap and water and afterwards with soda; they are then washed thoroughly with water, and finally, after drying, are put again to steep in a 1 to 20 carbolic solution till they are required.

In his private work he purifies his sponges by putting them after the operation into a tank of water and allowing them to putrefy. The fibrin which clings among the pores of the sponges becomes liquefied by putrefaction. They can then be washed thoroughly clean of their fibrin, the washing being continued until the water is no longer colored red. The sponges are then put in a 1 to 20 carbolic solution and kept there. The 1 to 20 carbolic solution should be used for purifying instruments, the hands of the operator, and the skin of the patient.

This method is much more convenient for the operator than the process of boiling. As to the length of time which the instruments should be kept in solution, this depends upon the care with which they are cleansed before putting them there. Any which have teeth should be brushed with a nail-brush before they dry, so that there will be no crusts of blood upon them which the carbolic lotion might require a considerable time to penetrate. Lister puts the instruments into a 1 to 20 carbolic lotion just before the patient is brought into the room; they are kept in during the administration of the anæsthetic and during other preparations, and this is quite adequate for the purpose. In purifying the skin of the patient it is not needful to apply an antiseptic lotion for hours together; a few minutes' action of a 1 to 20 carbolic-acid solution is really sufficient. For purifying the eyelids before ophthalmic operations the carbolic lotion would cause serious irritation. In this special case a weak solution of corrosive sublimate, applied in compresses, is probably the best. It must, however, be continued for a lengthened period.

While carbolic acid is more trustworthy as a germicide for surgical purposes than corrosive sublimate, it is in other respects also greatly to be preferred. Carbolic acid has a powerful affinity for the epidermis, penetrating deeply into its substance, and it mingles with fatty materials in any proportion. Corrosive sublimate, on the other hand, cannot penetrate in the slightest degree into anything greasy; and therefore, as the skin is greasy, those who use corrosive sublimate require elaborate precautions in the way of cleansing the skin—treating it with oil of turpentine or ether, not to mention soap and water—to remove the grease, which it is essential to get rid of for the efficient action of the corrosive sublimate.

Lister does not even apply soap and water, trusting absolutely to carbolic acid, which by its penetrating power and great affinity for organic substances purifies the integument in a way that inorganic salts, like corrosive sublimate, cannot.

The sponges during the operation are washed in a 1 to 40 carbolic lotion.

Finally, since it is impossible to be always quite certain that the assistants have been careful, the wound is washed with a 1 to 40 carbolic lotion before it is closed.

THE INFLUENCE OF CHLOROFORM ON THE COURSE OF NORMAL LABOR, AS STUDIED BY THE TOKO-DYNAMOMETER.

Doehnoff (*Revue Médico-Chirurgicale des Maladies des Femmes*, January 25, 1893) chloroformed eight parturients, and in the various stages of anæsthesia measured the intensity of the uterine contraction with the toko-dynamometer of Schatz, with the following results:

The tracings obtained showed that a paralytic action was exerted on uterine contraction.

The intensity of the contractions are diminished about one-half during full anæsthesia, and this diminution continues when the anæsthesia is prolonged. During partial anæsthesia the contractions become irregular as regards their mode of succession and their intensity.

When the anæsthesia is profound the uterine

contractions follow at regular intervals, and are long and feeble.

In one case of chloroform anæsthesia ten hours elapsed before the contractions again became normal.

THE USE OF ICHTHYOL IN FISSURES OF THE BREAST.

BEHREN (*Revue de Thérapeutique*, January 2, 1893) recommends the following formula:

Ichthyol, 4 grammes;
Lanolin,
Glycerin, of each, 5 grammes;
Olive oil, 1 gramme.

Or,

Oil of sweet almonds, 1 gramme.

This ointment is applied to the affected parts. The intolerable pain of nursing is immediately diminished, and the infant continues to nurse with impunity, since the ointment is not irritating, and is easily removed by washing with simple water.

THE ACCELERATION OF LABOR BY INTRAUTERINE INJECTIONS OF GLYCERIN.

PELZER (*Revue Médico-Chirurgicale des Maladies des Femmes*, January 25, 1893) recommends the injection of glycerin between the fœtal membranes and the walls of the uterus, observing the precaution that air does not enter with the glycerin. From fifty to a hundred cubic centimetres should be employed; the patient should be placed in the knee position. Four times in five cases the labor was premature.

Glycerin renders the neck of the uterus very dilatable, but aside from this has distinct oxytocic effects.

RUPTURE OF THE BLADDER.

SCHLANGE (*Archiv für Chirurgie*, Band 43) states that rupture of the bladder seldom comes within the province of the surgeon for treatment. According to Bartels, the rupture can exist without any external wound. Of 504 cases of injuries of the bladder collected by him, only 169 were found to be ruptures.

From an anatomical stand-point two varieties of tears are found,—intra- and extra-peritoneal.

Of 322 cases reported by Rivington, 183 were intra-peritoneal and 119 extra-peritoneal. Of all these cases only 27 recovered, and of the latter only one was intra-peritoneal. The author has collected only 32 cases, 22 of which were intra-peritoneal; 10 cases recovered and 12 died. Of the 10 cases of extra-peritoneal rupture, 7 recovered and 3 died.

In doubtful cases considerable knowledge may be gained as to the diagnosis by careful palpation and percussion of the bladder region. It is also indispensable that the patient be examined after recovering from shock, or, at the latest, within twenty-four hours of the time of injury. The patient should then be given an anæsthetic, his consent having been obtained for operation if the conditions found warrant the necessity of such a procedure. If the diagnosis be still uncertain, Riedel recommends that the bladder be opened through the perineum and its interior explored by the finger. Another class of surgeons recommend immediate laparotomy and examination of the bladder through this incision. The forcing in of air or salt solution may be of great aid in the diagnosis. A certain quantity of fluid may be forced into the bladder and then withdrawn, noting any difference between the quantity injected and that returned.

According to the author, injection of water into a ruptured bladder is a dangerous procedure, because of the possibility of stripping off peritoneum from the bladder or abdominal wall and forcing more liquid into the extra vesical tissues than otherwise would be found there. It is much safer to do a simple laparotomy with division of the left rectus.

The treatment of the abdominal cavity after the bladder contents have been extravasated into it has for its aim the removal of the urine and the neutralization of its effects by means of mild antiseptics. Weak lotions of sublimate or carbolic acid, and solutions of salicylic acid have been employed. Drainage is usually necessary, but in the author's case it was not used.

In the treatment of extra-peritoneal wounds it is not necessary to divide the left rectus muscle. As regards the bladder wound, different procedures have been suggested: the wound has been allowed to remain open, or it has been drained either through the abdominal opening or through the perineum; in the latter case the wound in the bladder is first sutured. A catheter should be passed into the bladder through the urethra and allowed to remain.

The abdominal wound should be packed with iodoform gauze, thus allowing bladder complications to be easily treated. The packing may be removed at the end of fourteen days and the abdominal wound allowed to granulate.

ISCHIO-PUBIOTOMY.

PINARD (*Revue Médico-Chirurgicale des Maladies des Femmes*, January 25, 1893) reports a case of ischio-pubiotomy in a twenty-three-year-old woman. The patient had an oblique oval pelvis with anchylosis of the right sacro-iliac articulation. The first child was delivered by a basiotripsis. Her third child was delivered dead, and with great difficulty, the mother nearly losing her life. A fourth child was delivered prematurely, it being also dead. At the fifth pregnancy the girl wished particularly to be delivered of a living child.

The author thought it practicable to do a symphyseotomy, but owing to the anchylosis of the left sacro-iliac articulation sufficient separation could not be obtained.

As the condition of the mother was too grave to allow a Cæsarian section, it was decided to perform ischio-pubiotomy. The ischial and pubic rami were cut on the anchylosed side 5 centimetres from the median line. Tarnier's forceps were applied, and a child weighing 3970 grammes was delivered. At first there was a separation of 2 centimetres; this was later increased to 6.

The only trouble that was experienced during the operation was the difficulty in using the chain-saw to divide the horizontal ramus of the pubis. There was practically no hemorrhage. The bone was brought together with sutures and united by first intention.

SYMPHYSEOTOMY.

KRASSOWSKY (*Centralblatt für Gynäkologie*, No. 5) performed symphyseotomy upon a twenty-three-year-old 11-para with the following pelvic measurements: Diagonal conjugate, 9; conjugata vera, 7.5; circumference, 80; spines, 23; crest, 24; trochanter, 27; external conjugate, 15. The first child was delivered by craniotomy. After dividing the symphysis a separation of three centimetres took place, followed by copious hemorrhage from the depths of the wounds, which could not be controlled by tampons. Forceps were applied and a living child delivered after three attempts at extraction. After extraction of the child the ends of the symphysis remained separated, but by compression of the pelvis could be nearly brought together. On attempting to control the hemorrhage by digital pressure through the anterior vaginal wall, the finger tore through. The afterbirth was delivered in fifteen minutes. The pubic bones were held within one centimetre of each other by means of five silk stitches; the vaginal tear was sutured. The entire operation lasted forty-five minutes. The child weighed 3410 grammes. The patient sat up on the third week and walked on the twentieth day.

SCHWARTZ (*Centralblatt für Gynäkologie*, No. 5) performed symphyseotomy upon a twenty-two-year-old 11-para for the removal of a retained head. Her accoucheur failing to deliver by forceps, performed version by the feet, delivering to the head, which he failed to bring out, although forceps were applied repeatedly. Decapitation was performed upon the already dead child in order to obtain a better hold upon the head. The uterus, however, was thrown into a state of tetanic contraction, and through laceration of the os there was alarming hemorrhage, requiring tamponnade of the vagina.

Schwartz found the patient, eleven hours after, exhausted through loss of blood, and in eclampsia. The pelvis measured,—spines, 21 centimetres; crest, 23; the conjugata externa, 16.8.

Symphyseotomy was performed; the symphysis separated to 3 centimetres immediately, and after the application of the forceps to 7 centimetres, allowing the head to be extracted without difficulty. The placenta was expressed, the tears of the uterus united with six sutures, and an iodoform-gauze drain inserted. The symphysis was united by means of four sutures, the skin-wound was secured, and a linen binder was applied over the hips.

The child's head measured,—fronto-occipital, 5; mento-occipital, 12.8; bitemporal, 10; biparietal, 8. The patient suffered from slight fever for two weeks, and left her bed in the sixth week.

Schwartz performed a second symphyseotomy upon a twenty-year-old woman with child in transverse position, prolapse of the left arm, tetanus uteri, stinking secretion.

The amniotic liquor had been discharged for days, and several attempts had been made at delivery, without result.

Under chloroform narcosis, version by the feet was tried, but failed, owing to the rachitic, deformed pelvis. Pelvis measurements were as follows: Spines, 25.5; crests, 25; external conjugate, 15; conjugata dextra, 8.5; conjugata vera, 6. The promontory directed to the left, and very prominent. The child was yet living, but Cæsarian section as a conservative measure was decided against on account of the previous injury to the uterus. Symphyseotomy was, therefore, performed. An immediate separation to 3 centimetres took

place. On introduction of the hand the symphysis separated to 5 centimetres. During extraction the child died. It weighed three kilogrammes. The symphysis was united with silver wire. The patient died on the eighth day with evidences of peritonitis, which were confirmed by the post-mortem examination.

TORNGREN (*Archives de Toxicologie et de Gynécologie*, December, 1892) performed symphyseotomy twice. In the first case he gives the following pelvic measurements: Spines, 21; crests, 27; trochanters, 28; conjugata externa, 17; antero-posterior, 10. The previous four pregnancies were spontaneously terminated; the second lasted five days. In the fifth pregnancy version was performed, and a dead child, weighing 4000 grammes, was delivered. In the sixth pregnancy version was also performed. The head could only be extracted with the greatest difficulty; the child, however, was born alive, weighing 3800 grammes. The seventh pregnancy was terminated spontaneously, the child living, which weighed 3300 grammes. In the eighth pregnancy version was performed, but the child was with great difficulty extracted. It died soon after birth. In the ninth pregnancy the patient entered the hospital under the author's care. As the antero-posterior diameter was only 8 centimetres, symphyseotomy was decided upon. A median incision, 8 centimetres in length, was made at the clitoris, and the symphysis divided with a button-pointed bistoury. There was separation of 4 to 5 centimetres. The wound was covered with iodoform gauze, and the child extracted with the greatest ease by means of Tarnier's forceps. After delivery the bone- and flesh-wounds were united with silk sutures, and the pelvis surrounded by an Esmarch band. The infant was apparently dead, but was afterwards resuscitated. Its weight was 3400 grammes, and it measured 52 centimetres.

The diameters of the head were as follows: Biparietal, 9.5; bitemporal, 8; occipito-frontal, 11; occipito-mental, 13.

The patient died seven hours after the operation. At the autopsy no trace of sepsis could be found. The heart was degenerated, and the kidneys showed chronic nephritis.

The second case was thirty-six years old. The rachitic pelvis measured as follows: Spines, 23; crests, 27; trochanters, 30; conjugata externa, 16; antero-posterior, 9.5. Her first pregnancy was terminated by a basiotripsis. In the second pregnancy the application of the forceps failed to effect the passage of the child.

An incision was made over the symphysis, the hemorrhage was arrested by forceps, and the symphysis was divided with a button-pointed bistoury, aided by the index-finger in the vagina.

There was separation of 2 centimetres as the child began to descend; when this descent was assisted by the forceps, the separation increased to 6 centimetres, and the subpubic ligament was ruptured.

The soft parts were closed with superficial and deep sutures and the pelvis surrounded with an Esmarch band. After delivery a large tampon of iodoform gauze was introduced into the vagina to keep the tissues posterior to the symphysis in contact with the bone. The child weighed 3750 grammes.

The head measurements were as follows: Biparietal, 9.5; bitemporal, 8; occipito-frontal, 12; occipito-mental, 13; length of the body, 53 centimetres.

The progress of the case was entirely normal.

The author thinks it a better plan not to divide the subpubic ligament, but to be satisfied with section of the cartilage.

OPERATION FOR CANCER OF THE BREAST.

LANE (Report of Clinical Society, *Medical Week*, vol. i., No. 5) described a case of cancer of the breast upon which he operated, removing, together with the diseased gland, the whole of the pectoral muscles. He then carefully dissected from the vessels and nerves of the axilla every bit of areolar tissue, together with the lymphatic vessels and glands. Lying between the pectorals, partly upon the chest-wall and partly upon the lesser pectoral, he found a thick cord of infiltrated lymphatics. This entered the axilla above the pectoralis minor. For some time previous to this operation he had been in the habit of dividing the anterior wall of the axilla, subsequently suturing the cut surfaces of the muscle together after carefully clearing the axilla of its lymphatic contents, and if necessary dividing the clavicle and treating the subclavian triangle in a similar manner, and then wiring the clavicle. Still, secondary growths formed in spite of this more extensive operation, but after a longer interval of time. When operating on such a recurrence he found, accidentally, a chain of infiltrated lymphatic vessels lying between the two pectorals in the position of those in the case described in this paper. Subsequently this condition was found in several cases, and the conclusion seemed fair that recurrences that

developed after clearing the axilla were due to the presence of this lymphatic tract, infiltrated with cancer elements, and that there was reason to suppose that if this were removed the duration of the patient's life would be increased considerably, and that possibly the disease might be eradicated altogether. On removal of the pectoral muscles and fasciæ forming the anterior wall of the axilla, with the lymphatic vessels in relation with it, all the lymphatic channels along which infection has extended are taken away. If necessary the subclavian triangle can be dissected clear of diseased tissue. A single dressing is required at the end of twenty-four hours, for the removal of the drainage-tube, the use of which is necessitated by the free oozing of blood.

The objections to the operation are the large quantity of blood lost and the resulting limitation of movement of the arm and shoulder.

NOTE.—Although an operation as radical as this might be indicated on theoretical grounds, it still remains to be proved that recurrence is less frequent or is even materially delayed by such procedure.

TREATMENT OF GONORRHŒA.

NEISSER (Second International Dermatological Congress, *Archiv für Dermatologie und Syphilographie*, 24 Jahr, 6 Heft), in discussing the principles of the treatment of gonorrhœa, states that the basis of all prophylactic and therapeutic measures must always depend upon a recognition of the gonococci, and that a judgment as to the gonorrhœal nature of every case must depend upon microscopical examination. The danger of gonorrhœal infection arises not so much from the acute inflammatory process it excites, but rather from its extension in men to the posterior urethra, seminal vesicles, epididymes, with involvement of the prostate and bladder, etc. In women, extension to the uterus, tubes, and ovaries, with involvement of the surrounding peritoneum. In the later stages of the disease the virus often gains entrance into the deeper layers of the epithelium; protected by its position from germicidal injections, it remains for months or years as a source of infection. In its earliest stages this virus is found superficially, and is readily destroyed by prompt therapeusis.

The main objects of the treatment should be to prevent the disease from extending into the posterior urethra, and to cure it before it becomes chronic. Therefore, treatment should be instituted as soon as possible after infection. Only such medicaments should be used which destroy the gonococci and are least irritating to the mucous membranes. As filling these indications, the following are to be commended: Silver nitrate, 1 to 4000 to 1 to 2000; ammonium sulph-ichthyolate, 1 to 100; sublimate, 1 to 30,000 to 1 to 20,000.

Pure astringents are to be avoided, while irritating solutions and all mechanical treatment, at least in the early stages, are distinctly dangerous.

The best results are secured by using the medication selected in the form of frequent irrigations, so that all parts of the mucous membrane may be thoroughly washed. In men, the practical way of irrigating is by means of large syringes; in women, washings and injections may be supplemented by swabbing of the urethra and the cervix.

Internal medication is useless. General hygienic, dietetic, and local antiphlogistic treatment are warmly to be commended. In all cases, excepting those in the acute stages of the disease, the first thing to be discovered is whether the posterior urethra is involved, and whether the secretion from this part of the urethra contains gonococci. Only in the latter case should acute posterior urethritis receive treatment. The duration of treatment should never be brief. It is not rapidity, but rather safety, for which the surgeon aims. In chronic gonorrhœa a search for gonococcus must first be made. In case these micro-organisms are found, irrigations or Guyon's instillations give the best results.

When no gonococci are found, irrigations and instillations will still be found of use, but other treatment is usually necessary. Recourse to the endoscope will often be needed before cure is accomplished.

Treatment of gonorrhœa in women is much more difficult than is the case in men. Without most careful microscopic examination of the secretion, it is impossible to determine how much good is being done by treatment. The treatment of acute cases should be prompt and energetic, since thus involvement of the uterus, tubes, and ovaries may often be avoided. The rectal gonorrhœa deserves more attention than it has heretofore received, since this forms the starting-point of many chronic rectal ulcers.

Lang agreed with Neisser that rectal gonorrhœa is much more common than is generally believed, and stated that it often leads to rectal stricture. He treated both the latent and chronic cases by soluble bougies.

Wielander warmly commended his abortive treatment of gonorrhœa. This method consists in the mild scraping of the superficial epithelial layers of the anterior portion of the urethra, and especially of the fossa navicularis, by means of a pledget of cotton wound on an applicator. After this rubbing, 15 drops of a two- to three-per-cent. nitrate-of-silver solution are injected and retained in the urethra for some minutes. This injection may be repeated the following day, if necessary. In none of the many cases thus treated were there any complications. The only unpleasant feature was the ardor urinæ from which patients suffered for one or two days. When this treatment was employed before the gonococci had penetrated between the epithelial layer, gonorrhœa was aborted.

Finger called attention to the fact that cases varied greatly in intensity and in the rapidity of their extension. He stated that an experimental research on dogs proved that a ten-per-cent. solution of nitrate of silver penetrated deeply an inflammatory infiltrate. A five-per-cent. solution acted more superficially, while a one-half- to one-per-cent. solution acted purely on the surface, destroying only such gonococci as were entirely superficial.

Van Hoorn stated that by injections of sublimate in the beginning (1 to 20,000) he was able to abort an acute gonorrhœa.

Lewin held that after a 1 to 4000 solution of nitrate of silver was used, this penetrated by means of imbibition into the deeper portions of the inflammatory infiltrate.

Neisser believed that the use of the endoscope and the passage of instruments in acute cases were attended with absolutely no danger; that the application of strong solutions of silver nitrate, although sometimes attended with brilliant results, is, as a rule, very unreliable, and is at times dangerous. Irrigations he commended, but believed that they were not practicable.

Medication by the stomach he held was useless so far as its germicidal effect was concerned, although doubtless by this means it is possible to diminish suppuration and lessen inflammatory action. He believed that the examination of prostitutes without subjecting their discharges to a microscopic test was ridiculous in the extreme.

MYXŒDEMA.

MacKenzie (*Lancet*, No. 3, vol. i., 1893) summarizes the symptomatology, pathology, and treatment of myxœdema, and contributes a case successfully treated by a new method. He calls attention to the fact that several members of the same family may be attacked. Atrophy of the thyroid gland is marked in all. When the malady is fully developed there is considerable increase in the bulk and weight of the body. The physiognomy is markedly altered, the features assuming a placid, mask-like form of expression; the eyebrows are elevated, the eyelids puffy, and the nostrils broadened; the lower lip is thickened, everted, and livid, while the cheeks show a red patch, contrasting strongly with the eyelids. The skin is dry, scaly, and downless; the hair is dry and frequently scanty; the subcutaneous tissue is swollen, especially in the hands, feet, and legs, but it does not pit on pressure; there is usually fulness in the supraclavicular regions; the gums are swollen and spongy; the teeth carious; the tongue, uvula, and soft palate are swollen. The temperature is usually subnormal, and the patient feels cold. There is impairment of memory, irritability alternating with placidity, slow, monotonous, and deliberate speech, and a slowness in comprehension which is clearly appreciated by the patient. Sensation is sometimes markedly retarded, and hearing, smell, and taste are blunted. There is frequently a certain amount of inco-ordination, the legs giving way unexpectedly. The pulse is usually weak, soft, and slow. The mucous membranes have a tendency to bleed; the urine is of low specific gravity, and at a late stage usually contains albumin. All the symptoms are aggravated by cold weather.

The disease has a tendency to progress slowly. Some patients are carried off by phthisis or other intercurrent diseases, the remainder dying of myxœdema. The autopsy shows increase in fat, passive effusion into the serous cavities, and atrophy of the thyroid gland. At the time of death mucin may not be in excess, but there is little doubt it is an essential feature at a certain stage of the disease. This excess of mucin has been found in internal organs as well as in the subcutaneous tissue.

The first step in the way of remedying this condition was made in the experiments of Schiff, who showed that the evil effects of thyroidectomy in animals could be diminished by transplanting a thyroid gland previous to the operation. Horsley suggested a similar procedure as a possible means of arresting myxœdema. The first trial of this method was attended with striking, but only very limited, improvement. The difficulty was to effect the survival of the transplanted gland in its new position, and what actually happened was its

absorption into the surrounding tissues. Next were tried hypodermic injections of the glycerin extract prepared from these glands. Murray and other physicians obtained very beneficial results from this.

The objections to this method were the pain attendant upon it and the danger of subcutaneous abscesses. It was also found that lividity, loss of consciousness, temporary loss of power in the extremities, or general muscular spasm, sometimes supervened during or immediately after the administration of an injection.

The author discovered that the administration by the mouth of the thyroid gland, or of a preparation derived from it, served the same purpose as a preparation of thyroid extract. The patient he treated by this method had been suffering from the fully-established disease for several years. She was a typical example of myxœdema. She was ordered two sheep's thyroid glands to be obtained fresh from the butcher and to be given finely minced every day. The effect of this administration on temperature and on the sensation was almost immediate. The temperature became normal, or even a little above normal, while a comfortable sensation of warmth permeated the patient's body. The administration was not quite regular on account of difficulty in procuring the glands. During the first fortnight the patient received eight thyroid glands and two drachms of thyroid extract by the mouth. By the end of that time her appearance had very considerably altered for the better, but her pulse-rate had risen from 56 to 116; the rapidity of her pulse continuing, the administration of the thyroids was discontinued for a time, when the rate gradually fell to 80. The patient suffered from vomiting at times. This and undue rapidity of the pulse can usually be taken as an indication for the temporary cessation of the treatment.

Six weeks after the treatment was started the hands and feet desquamated as completely as after scarlet fever, and delicate, soft skin replaced the former coarse cuticle; there was a rapid loss of bulk and weight, so that in two months there was a difference of about twenty-eight pounds. The mental condition and speech improved in the same ratio. The hair came in rapidly.

The finely-minced gland was at first administered with a small quantity of brandy and beef-tea. Later it was allowed to stand for about half an hour with a few teaspoonfuls of water. This was then strained, the juice being squeezed through a piece of linen or muslin. The expressed fluid was added to some beef-tea. An extract thus made, administered once a week, was sufficient to keep the patient in good health after she was cured.

Later experiences convinced the author that much less of the remedy is required than was employed at first in this case. The gland, or half a drachm of the extract therefrom, twice a week is as much as it seems advisable to commence with, and at a later period the same amount once a week appears to be sufficient.

MacKenzie tried this treatment on two cases of Graves's disease, or exophthalmic goitre, but without any effect on the symptoms.

THE TREATMENT OF AMENORRHŒA IN YOUNG GIRLS.

CARRIÈRE (*Revue Médico-Chirurgicale des Maladies des Femmes*, January 25, 1893) states that far better results are obtained by the combination of iron with ergot than are to be expected from iron alone.

Trousseau employed honey of iron with most excellent results. In some cases it is more advantageous to combine the iron, especially the tartrate of iron and potassium, with emmenagogues.

In cases where the amenorrhœa is caused by chlorosis, general hygienic treatment, with perhaps a change of climate, will often bring about the desired result. Or, if these fail, inhalations of oxygen, and massage may be tried.

Of the emmenagogues only three are of any special value in these cases,—namely, mugwort, saffron, and apiol.

Mugwort may be used in the form of an infusion, the strength being five grammes to a litre of water, three cupfuls to be taken during the day. Saffron can also be administered as an infusion, a few of the pistils to be added to a cup of boiling tea. Apiol should be given in gelatin capsules in doses of 25 centigrammes twice daily.

The question as to the time of administering emmenagogues is a simple one. Medication should be begun at least two days before the expected time and should be continued for five or six days afterwards.

This same plan of treatment should be repeated the following month. If at the third month the sickness should be at the regular time, medication should be discontinued.

Static electricity is at times a stimulant and at other times a sedative to the nervous system.

It often acts as a powerful emmenagogue. Arthius and Larat claim that the electricity should be applied to the pelvis, limbs, and lower part of the abdomen. Ten or twelve applications are generally sufficient.

For irregular menstruation the preventive treatment of chlorosis and care to avoid fatigue are generally sufficient to regulate the flow, without the administration of the emmenagogues.

Cases of sudden arrest of the sickness from cold or emotional causes are best treated by warm foot-baths, sinapisms to the thighs, and the internal administration of bromide of potassium, valerian, hot punch, etc.

IMPLANTATION OF THE URETER INTO THE RECTUM.

MORESTIN (*Revue de Thérapeutique Médico-Chirurgicale*, 60 an, No. 3) has experimented upon dogs, with the idea of determining whether it is possible to successfully implant the ureter into the rectum.

In ten animals both ureters were secured in the rectum. Six of these died of peritonitis or renal infection. In fourteen animals the ureter of one side was secured in the rectum. In four cases no previous dilatation of the ureter was practised. All died of peritonitis or infection. In four cases the ureter was previously dilated; one died. In six cases dilatation and lateral incision were both practised; death followed from hydro-nephrosis or infection. Some of the dogs in which simple dilatation was practised lived for awhile, but finally the ureter was constricted by the rectal walls. The author concludes that an operation of this kind promises very little; that although it is easier in men than in dogs, because of the larger ureter in the former case and the possibility of much more rigid antisepsis, nevertheless a bilateral operation of this nature should be rejected.

Tuffier, in commenting upon these experiments, states that the results were necessarily bad, since the condition attained by operation in no way simulated that found in nature. When the ureter is opened into the rectum, the conditions are quite different from those obtaining at the vesical orifice of this tube. Septic nephritis is always to be feared in these cases.

Chaput observed that he had twice performed this operation in man, with successful results.

Reviews.

DISEASES OF THE LUNGS, HEART, AND KIDNEYS. By N. S. Davis, Jr., M.D.
Philadelphia and London: The F. A. Davis Publishing Company, 1892.

We are told in the preface of this number of the "Ready Reference" series that the volume comprises a number of the lectures delivered at the Chicago Medical College. Doubtless for this reason the articles are not as thorough as they would be had Dr. Davis given himself the task of writing an exhaustive treatise upon the diseases affecting the lungs, heart, and kidneys of man. Those who are fond of having prescriptions prepared for them will find quite a number printed in this work, but the compression of so many important classes of ailments into the short space of three hundred and fifty-three small pages renders the task scarcely thorough enough for the information of the careful practitioner.

A MANUAL OF PRACTICAL, MEDICAL, AND PHYSIOLOGICAL CHEMISTRY. By Charles L. Pellew, E.M. Illustrated.
New York: D. Appleton & Co., 1892.

To those who are fond of carrying on private laboratory work in association with the practice of medicine, or who wish to make careful examinations of the secretions of patients, this book will prove invaluable. It is not a work which has been gotten together for the use of the ordinary practitioner, and will probably find its largest usefulness in the hands of the undergraduate student, who is gaining in the laboratory the chemical information which is necessary as a groundwork for the practising physician.

The illustrations are clear and useful. An appendix is given, which contains tables of weights and measures, atomic weights, a list of reagent bottles and chemicals which are necessary, and a list of the apparatus required for the various lessons which are arranged in the book, and which extend from No. 1 to No. 30.

THE INTERNATIONAL CLINICS. Vols. I., II., and III. Second series.
Philadelphia: J. B. Lippincott Company, 1892.

That the "International Clinics," published by the J. B. Lippincott Company, have proved themselves valuable to the practitioner of medicine is proved by the success which they have apparently obtained, although those who are best acquainted with the profession and the works which it is apt to buy, considered the

venture a doubtful one when it was first undertaken.

The three volumes which are here before us afford us an opportunity of discovering upon what this success is based. They consist in brief lectures, which tersely summarize the most recent and rational views concerning disease and its treatment. They therefore afford to the busy doctor an opportunity which he could otherwise only get by attendance upon the clinics of some large medical school, whose faculty consisted of men of eminence.

The most noticeable articles in these three volumes are "Empyema and its Treatment by Valvular Drainage;" "The Examination and Treatment of Eye-Diseases in Children;" "A Memoir of Professor Agnew;" a paper by Dercum upon "Cerebellar Titubation, Sunstroke Sequelæ, Syringomyelia, Traumatic Hysteria;" "Trephining for Focal Epilepsy and for Brain-Tumor;" and one by Goodell upon the "Radical Cure of Cancer of the Womb by Hysterectomy."

These titles give but a faint idea of the diversity of the information contained in these clinics. It is to be hoped that the profession will appreciate them sufficiently to justify the publishers in the continuation of the series.

ALCOHOLISM AND ITS TREATMENT. By J. E. Usher, M.D.
New York: G. P. Putnam's Sons.
London: Baillière, Tindall & Cox, 1892.

The book before us is a small volume of upward of one hundred and fifty pages, and deals briefly and in a popular manner with the various forms of inherited and acquired alcoholism, the relations of alcoholism to insanity and crime, and, finally, the treatment of alcoholism. The medical portions of the book are written evidently with a view to impress the lay reader rather than to be of value to the medical man, as witness the brief chapters on the pathological changes in alcoholism, in which the subject is dealt with in a most superficial manner. The chapters of real value in the book are the ones on alcoholism and its legal relations. Here much valuable information is compressed into a small space, and English and American law in relation to both civil and criminal cases is treated in a very satisfactory manner. The chapters on treatment are, on the whole, rather disappointing, the subject being dealt with in too general a way. It is very probable, however, that the anthor has written his book mainly to emphasize the idea that alcoholism is a disease and is amenable to treatment. In this his object has certainly been accomplished. F. X. D.

HAND-BOOK OF MASSAGE. By Emile Kleen, M.D., Ph.D. Authorized translation from the Swedish, by Edward Mussey Hartwell, M.D., Ph.D.
Philadelphia: P. Blakiston, Son & Co., 1892.

There have been a number of books upon this subject published within the last few years, some good, some bad. Most of them bad. This is one of the good ones, if not the best.

It contains practically all that is necessary for the physician or nurse to know concerning this important therapeutic measure, and discusses with more reason than do most books devoted to specialities of this kind the advantages which are to be gained by it in various diseased states. If there is a demand for a book on massage, no doubt this work will meet that demand.

As a piece of book-making, it is marred by a large number of foot-notes, which detract greatly from its appearance.

THE PHYSICIAN'S COMPLETE BOOK OF REFERENCE, CONTAINING A CALL-LIST AND RECORD OF VISITS, CASH ACCOUNTS, LEDGER, OBSTETRICAL RECORD, DEATH RECORD, AND GENERAL MEMORANDA. Edited and compiled by S. E. Walker, M.D.
Philadelphia: The Keystone Publishing Company, 1892.

This combination-book devotes its first eighty or one hundred pages to an alphabetical index, and after this consists in a careful arrangement designed to enable the busy physician to keep his accounts without difficulty. We presume that this is about as perfect a compilation as could be made, but we doubt whether many physicians are careful enough to keep all the records which this book requires. Nevertheless, it will tend to make the physician keep his accounts correctly, and after he has once grasped the details of its arrangement, he will find no difficulty in making all the entries which are necessary for the records of his daily work.

LECTURES ON MENTAL DISEASES, DESIGNED ESPECIALLY FOR MEDICAL STUDENTS AND GENERAL PRACTITIONERS. By Henry Putnam Stearns, A.M., M.D.
Philadelphia: P. Blakiston, Son & Co., 1893.

The utmost latitude should be conceded to an author of a text-book on insanity, both in the arrangement and in the handling of his subject, for in no other field is there so much debatable ground.

Following the general plan of other writers, the author very properly divides his book into two portions,—one general and one special. In

the first are considered, very briefly, "the physical basis of thought,"—*i.e.*, the structure of the brain, and the "elements" of insanity; namely, hallucinations, illusions, imperative concepts, insistent ideas, and delusions. The use of the word "elements" seems to us rather unfortunate. It seems to imply that insanity is a something made up of component parts, as, for example, a chemical compound.

It is, however, with the second portion of the book that we are the most concerned. We turn almost instinctively to the pages upon classification, as affording an insight into the author's views of insanity,—as displaying more or less the author's grasp of his subject. Here we must candidly confess we are disappointed. The author devotes several pages to prove a proposition which every alienist must admit,—namely, that all classifications are to be regarded as merely tentative; but even this must be accepted as true only in a limited sense. A certain natural classification, such as Krafft-Ebing has followed, suggests itself. All insanities fall into two great groups,—*a*, those without, and *b*, those with definite anatomical changes. Further, Krafft-Ebing has shown, as regards the first group, that certain of the psychoses occur in persons with an inherited or an acquired predisposition, and that others occur in persons in whom no predisposition whatever existed. In other words, among the insanities unassociated with anatomical changes, some appear in individuals in whom there is an hereditary or acquired neuropathic taint, and others in individuals free from such taint. Certainly, no writer upon insanity can afford to slight such fundamental generalizations.

As a basis for his lectures the author presents the following arrangement. All forms of insanity are divided into two,—*a*, "Symptomatological," and *b*, "Ætiological." The latter are subdivided into "epochal," "sympathetic," "toxic," "neuropathic," "pathological," and "other less frequent genera and species." The author does not invite comment upon this "arrangement," and we believe it to be unnecessary.

The various forms of insanity are considered in the following order: Melancholia, mania, primary delusional insanity, folie circulaire, dementia, adolescent insanity, senile insanity, climacteric insanity, insanity of pregnancy, insanity of masturbation, epileptic insanity, alcoholic insanity, general paresis, acute delirium, and post-febrile insanity.

The descriptions are, as a rule, clear and full, and cases are cited here and there in illustration. In addition, the more salient points are accentuated on almost every page of the book by heavy-faced type. The great advantage of this method in a text-book is obvious. Finally, there is a valuable appendix of "Extracts from the Laws of the Different States and Territories of the United States which relate to the General Care of the Insane." F. X. D.

HAND-BOOK OF INSANITY FOR PRACTITIONERS AND STUDENTS. By Theodore Kirchhoff, M.D. New York: William Wood & Co., 1893.

The book before us is divided into a general and a special part. The first deals with the anatomical basis, and the location, the causes, the signs, the course, the diagnosis, and the treatment of mental disorders, and concludes with an interesting chapter on the history of psychiatry.

The author divides insanities into, first, simple mental disorders; and, secondly, mental disorders associated with permanent anatomical changes in the brain or with general diseases. The description of the various forms of insanity is excellent, and leaves little to be desired. Everywhere we are impressed with the thorough and scientific manner in which the author deals with his subject. The language is simple, clear, direct, and unincumbered by metaphysical expressions. In addition to this excellent text there are no less than eleven plates, each containing four or five figures, illustrating the various typical forms of insanity. They are evidently reproductions of photographs, and are in themselves admirable.

Although nothing is said on the title-page that would lead us to infer a German origin of the book, other than the name and position of the author at the University of Kiel, this origin is revealed in the text by the retention of the names "wahnsinn" and "verrueecktheit," as designating subdivisions of paranœa. As a foot-note very correctly explains, these terms have no exact equivalent in English. Wahnsinn is defined as a mental disorder in which delusions and hallucinations are rapidly combined into a composite whole, intimately associated with strong effects; while verrueecktheit is defined as a mental disorder in which delusions, usually associated with hallucinations, are carefully and slowly combined into a progressive delusional system, and in which the effects are only accidental elements of the clinical history and rapidly disappear. As a third form of paranœa, the author places "confusion," which is merely a terminal state of verrueecktheit. As is readily seen, this classification of paranœa is less complicated than that of Krafft-Ebing, and

perhaps better suited to the wants of the student.

The tendency of the book throughout is towards simplicity, conciseness, and precision. As a whole it is an excellent presentation of modern scientific psychiatry. The publishers had a happy thought when they decided to place it before us in the English language, and the profession is to be congratulated.

F. X. D.

A Hand-Book of Diseases of the Eye and their Treatment. By Henry R. Swanzy, A.M., M.B., F.R.C.S.I. Fourth edition. With illustrations. Philadelphia: P. Blakiston, Son & Co., 1892.

Two years have sufficed to exhaust the third edition of this excellent text-book, and now the fourth is presented for the consideration of students of ophthalmology, A work which has met with such success does not require an extended review. Probably no other text-book of like proportions has succeeded so well in fulfilling the promise of its author to give a succinct and practical account of the subject in its most modern aspect. It is unnecessary to do more than welcome the new edition and heartily recommend it, as we have done for the volumes which precede it, to students and practitioners of ophthalmic surgery.

Correspondence.

LONDON.

(From our Special Correspondent.)

The Hospitals of London.—The Electrical Department at St. Bartholomew's.—It has become a generally recognized rule that the practitioner who wishes to pose as an authority in his profession will almost of necessity find it greatly to his advantage to travel. Otherwise, though he may be to some extent informed through the medical journals of the progress which takes place in other countries, he will still be at a disadvantage as compared with the man who, having seen with his own eyes the manners and customs of other countries, returns to compete with him in the struggle for existence.

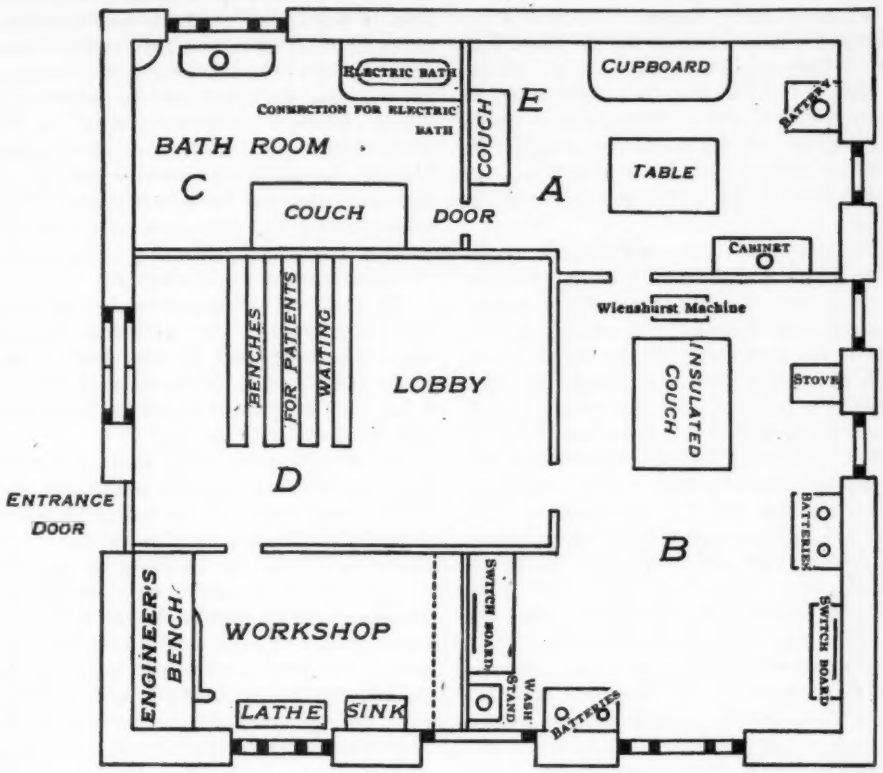
Though it is still, as formerly, the recognized thing to go the round of the German schools, it is, if I may judge from the number of Americans who now visit the London hospitals, at least as profitable to spend some part of the time allotted for travel in tapping the great storehouse of clinical material contained in our great metropolis. The post-graduate courses, which are becoming more and more appreciated by our foreign visitors, have done a great deal to establish our reputation as clinical teachers of the world's students; but still greater things are possible, and I feel that it will not be without interest to the readers of this journal if I give them, in a series of short papers, some of the special features presented by our London hospitals.

I do not propose to take these in any definite order, but I feel that I am bound to commence with my own school,—St. Bartholomew's Hospital,—one of the largest, and certainly the best endowed, of our metropolitan schools.

A few years ago hospital practice was very different to what it is at the present day. There was a broad division of the cases into medical, surgical, and gynæcological, but the refinements of subdivision at present in vogue were practically unknown. This month I shall deal with the most recently introduced, but by no means the least advancing of our special departments,—that devoted to *electrical treatment.*

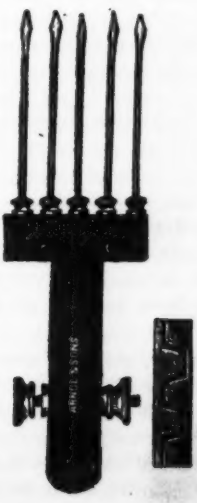
The Buildings.—Entering the hospital by the large gate leading from West Smithfield, one sees to one's left a series of small and unpretentious buildings. It is these which I am now about to describe, and I have had my task made comparatively easy by the kindness of Dr. Lewis Jones, the physician in charge of the department, who has been good enough to furnish me with much of the information which follows, and has also revised the article. The department first came into existence at the end of 1882, and was placed under the direction of the late Dr. Steavenson, who may be said to have been almost the pioneer of systematic medical electricity in this country, although an electrical department had been in existence for some time previously at Guy's Hospital. When I say that the number of cases treated by electricity during the first year of the existence of the special department, including those cases in which the current was used only to test muscular reactions, only amounted to fifty-five, while in the past year the number has risen to more than three hundred and fifty (most of them being cases of paralysis in which the current was used for curative purposes), it will easily be seen how the work has increased in importance.

The Rooms.—The arrangement of the rooms will be best seen from the accompanying plan. The department consists now, as formerly, of a general room, in which are two assistant elec-



A Dr Jones' Room C. Bath Room

B. General Room D. Waiting Room



tricians and a number of clinical clerks selected from among the senior students of the hospital; a room occupied by Dr. Jones himself; a bath-room; a waiting-room for the patients; and a workshop in charge of an attendant, who is able to effect all small repairs and renewals without need for calling in the instrument-maker, and whose duty it is to see that all apparatus is in thorough working order.

The Apparatus.—The equipment of the department includes three large batteries, formed of sixty Leclanche cells each. These are kept in a cellar underneath the rooms, and the current is led from them to three switch-boards, each completely fitted with commutator, galvanometer, rheostat, and induction coil. In the older forms of switch there used to be the great economic difficulty that the collector-arm, in passing from stud to stud, short-circuited each cell in turn when resting on two studs at once, thereby causing a great waste of battery-power. In the improved form with which the switch-boards are now fitted this is obviated in the following manner: The pointer is split longitudinally, and its two halves are joined through a resistance of fifty ohms, which prevents serious short-circuiting. Besides these large batteries, there are four portable batteries and two separate faradic machines in regular use, so that a considerable number of patients can be treated at once. The rooms are also well supplied with galvanometers, as a necessary addition to each galvanic battery, for there is nothing more important in the application of electricity than to know the exact amount of current which is being used.

I have spoken of the Leclanche battery as the one in favor here, and this may be a matter of surprise to some, when so much is now said about the advantages of dry cells. Of course most of the varieties of dry cells have been tried in the department, but it has been found that the heavy work required of a hospital battery soon exhausts the small capacity of most of them, so that, useful as these cells may be for private practice, they are at present unsatisfactory for hospital work.

Cauteries and small incandescent lamps used formerly to be worked by bichromate cells, but it is found far more economical and satisfactory to use accumulators for this purpose. A four-cell accumulator, weighing about thirty pounds, is sufficient for all the incandescent lamps used, and is much more economical than the small sizes of accumulators now on the market.

For statical electricity there is an eight-plate Wimshurst machine inclosed in a glass case and placed in the general room. It works extremely well in all weathers, and is without doubt far more efficacious for hysterical cases than any form of faradic treatment. The statical treatment employed may be described as almost entirely a treatment by sparks, the patient sitting or lying on an insulated couch and holding one conductor, while the other is presented to the part under treatment. Wires very thickly coated with gutta-percha are used as leads, knobs of different sizes being adapted to the ends of the wires as required.

The Cases.—I will now give some particulars of the cases treated. As I said before, the number of new cases which attended last year was about three hundred and fifty, most of these being cases of paralysis, and the commonest type being infantile paralysis.

Infantile Paralysis.—The treatment of this form of paralysis is, according to the experience of the department, far more hopeful than is generally imagined, and if it be recollected that children suffering from this disease are often not brought until two or three years after its commencement, the results are highly satisfactory as compared with those obtained by drug treatment. One thing is essential; this is, that the children be brought regularly, at least twice a week, and that care be taken in carrying out all the instructions given. There are often as many as twenty under treatment at the same time, and the number seen in the course of the year has been over fifty. Nearly all have shown a marked improvement. One case deserves special mention. This is that of a child who, when it first attended, had paralysis of one leg. This yielded to treatment, but at the end of the course the other leg became affected. It is satisfactory to record that treatment was then applied to the other leg with equal success. The treatment employed is by the constant current, the negative pole being applied to the affected limb and the positive pole to the spine. A current strength of about five milliampères only is required; but, as different children show a marked difference in their tolerance of the current, the rule is to apply a strength just short of what is painful to them. The mothers are also directed to regularly bathe and rub the affected limb every night at home.

Deltoid Paralysis.—Cases in which the deltoid is the muscle affected are also fairly frequently seen, but these do not improve nearly so markedly as those in which the leg is the limb affected.

The results with facial paralysis are most satisfactory. The same applies to paralysis from pressure or injury of nerve-trunks, especially

that form usually known as "crutch palsy." Improvements have also been noticed in some cases of hemiplegia. In these cases it cannot quite be expected that a complete recovery will often ensue, as the electric current does not pretend to do away with the effects of gross nerve-lesions; but it appears that there is often an amount of paralysis far greater than that which can be accounted for by the actual nerve-lesions, and in these a short course of faradism often succeeds in restoring a certain amount of power to the affected limbs, much more than could have been expected. It is certainly, according to the experience of the department, quite worth while to give any case of hemiplegia the benefit of a month's treatment.

Neuralgia, etc.—In the treatment of neuralgia the results have been very favorable. Although no very obstinate cases have recently been seen, a great number of cases of sciatica and lumbago are sent from the wards for treatment. In these cases some have been treated by application of the positive pole of a constant battery to the sciatic region, using a large electrode and large currents. Others have had the electric-bath,—either the faradic or the galvanic. It often happens that one of these forms of treatment may succeed after the other has failed, so that no case should be given up until both the faradic- and the galvanic-bath have been tried.

Electric-Bath.—The electric-bath is largely used for a variety of conditions. Hardly a day passes without its application to some patient. Dr. Jones tells me that more than four hundred baths were given last year, the great majority of cases being those suffering from chronic rheumatism. The faradic-bath has also been used with varying success in cases of chronic myelitis and spinal sclerosis. I should not omit to mention that the faradic-bath has also been used for some cases of exophthalmic goitre, and that these cases have shown considerable improvement, far greater than has been obtained in others by the usual method of applying galvanism to the neck.

Enuresis Nocturna.—Enuresis nocturna is another condition which frequently comes up for treatment, and which seems remarkably suitable for treatment by electricity. The treatment at present adopted in these cases is to apply faradism for five minutes to the perineum, to follow this up by galvanism for a like time with the positive pole, the other electrode being placed on the lower dorsal spine. *This* treatment is usually successful if persevered in for about two months, and many patients begin to improve from the commencement. Care must, however, be taken that treatment is not discontinued too soon, for relapses are frequent under these circumstances. A special electrode, devised by Dr. Jones, is generally used in the department. It consists of a conical-shaped plug or base, which is so shaped as to be of easy application to the perineum. A piece of wash-leather is stretched over this, and held in place by means of a firm ring of vulcanite. The advantage of this form is that a fresh piece of wash-leather can almost instantly be adjusted for the use of each patient.

Tinnitus Aurium.—Many patients sent over from the ear department are also to be seen here suffering from tinnitus aurium. About one-half of these are relieved by the treatment, which consists in the simultaneous application of the positive pole to both ears at once by means of a forked electrode resembling a binaural stethoscope. The ends are not inserted into the meatus, but are placed just in front of the tragus. The patients are thus enabled to hear and notice any change in the character or intensity of the sounds, which they cannot do so well when the electrodes are in the ear itself. The strength of current used varies between five and ten milliampères, and is switched on and off very gradually by the aid of a rheostat, for it is found that any sudden alteration of current is apt to make the tinnitus worse instead of better.

Surgical Applications.—The chief surgical applications of electricity, as used at St. Bartholomew's, are its use for the electrolysis of nævi and moles and for the destruction of redundant hairs. Trichiasis is far better treated by removal of the eyelashes in this than in any other manner. The introduction of the galvanic needle into the hair-sac effectually prevents the recurrence of the trouble, whereas epilation generally requires to be done frequently.

Several cases of nævi can generally be seen under treatment in the department. Both poles of the battery are used, and are connected with fine needles, which are inserted into the nævus. Either separate needles are used, or, in the case of a large nævus, a special bipolar fork electrode, made up of a series of needles so connected with the battery as to be alternately positive and negative. This is also an arrangement introduced by Dr. Lewis Jones.

As regards the other uses of electricity in the hospital, the officers are frequently called upon by the surgeons to apply the galvano-cautery, and also to manage the cystoscopes which are constantly being requisitioned. The very large

cautery of Professor Bottini, recently figured and described by Mr. Bruce Clark in the *British Medical Journal*, is also used occasionally for the treatment of enlarged prostate. The success of this treatment in the few cases to which it has been applied is, however, most encouraging, and leads to the hope that it will receive a more extensive trial. The current required to heat Bottini's cautery is very large,—viz., fifty ampères,—and this is a severe tax on the accumulators.

Lead Palsy.—In speaking of paralyses, I find I have omitted mention of another variety of cases which frequently applies for treatment,—namely, lead palsy. These are somewhat peculiar, in that the muscles nearly always show markedly the reaction of degeneration some time before the patient complains of paralysis. That they do improve considerably under galvanic treatment there is no question; but it, unfortunately, generally happens that, as soon as the symptoms get less urgent, the patients return to their old work, and commence once more to absorb the poison, so that in most cases the poisoning and the remedy are going on simultaneously. This leads to all sorts of peculiar reactions, and it is necessary to know the habits of this class of patients in order to understand them.

In conclusion, I may say that I have seen the electrical departments of other hospitals, and can candidly say that there is no other which will so well repay a visit as that of St. Bartholomew's. The work carried out there is doing much, and will assuredly do more, to release this form of treatment from the stigmatism of quackery, under which it has labored so long in this country. If medical men refrain from acquainting themselves with the legitimate applications of electricity, they are deliberately playing into the hands of the quacks and impostors who profess to cure all ailments, real and imaginary, by its aid. If they make it their business to become skilled in the application of this, as of any other therapeutic measures, there will no longer be room for those ignorant and unqualified professors of the healing art who have done so much to throw discredit on the whole question.

THE ACTION OF SULPHONAL.

To the Editors of the THERAPEUTIC GAZETTE:

DEAR SIRS:—I must take exception to your note on page 116 in the February GAZETTE. An experience of three years with the administration of sulphonal to many more than five hundred patients suffering from the various forms of insomnia, as seen in an indigent insane hospital, warrants me in making a most positive statement that for rapid action and quick results sulphonal (20 grains), administered in *hot* milk or water,—in other words, dissolved,—is most efficient, and will, in the great majority of instances, produce quiet, refreshing sleep in less than thirty minutes after its administration.

If your statement that "sulphonal generally takes five or six hours to act" were correct, it would be a useless hypnotic. I have made much use of hypnotics, and have come to depend upon four of the group as meeting the indications in the majority of instances, save in the insomnia of alcoholism,—viz., for rapid action in pure insomnia or the insomnia of active mania in the strong and vigorous, with good hearts and kidneys, sulphonal (20 grains) dissolved in hot menstrua, such as hot milk, hot water, or hot beef broth, or somnal (½ to 1 fluidrachm), diluted.

In the less vigorous, with cardiac, chest, kidney, or gastric complications, chloralamid (20 to 30 grains) dissolved, or hyoscine hydrobromate ($\frac{1}{100}$ grain).

In the aged, in the insomnia of organic brain-disease, in the very feeble from whatever condition, hyoscine hydrobromate ($\frac{1}{100}$ grain).

In the above I am indicating the drugs that have positive value for *insomnia*, and not for mania, hysteria, etc.

For the insomnia of acute alcoholism I have found no one drug treatment comparable with a hypodermic injection of morphine (⅓ grain), followed by chloral (20 to 30 grains), with tinctura capsici (20 minims) or paraldehyde (1 drachm, repeated).

I find that one of the sources of failure of hypnotics is neglect of the condition of the heart. In all cases of cardiac weakness and slowness, the use of caffeinæ citrat. during the day, and in weakness with rapidity, digitalis during the day, will give good results from hypnotics where failures otherwise occur.

D. E. HUGHES.

PHILADELPHIA HOSPITAL.

[Sulphonal, like all other drugs, acts only when it is absorbed. If given in powder, or in pill or compressed tablet, it takes several hours to act, because this time is consumed in its solution and absorption. If thoroughly dissolved in hot water, it probably acts in ten or fifteen minutes, because the heat and state of solution cause rapid absorption.—ED.]